



Addendum #04

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Cape Henlopen School District
Lewes, DE
R. Shields Elementary School

Bid No.: 200-81485-16005

Tt Project No. 200-81485-16005

Addendum No. 4 04/03/2020 To Project Manual and Drawings

To: ALL BIDDERS

This ADDENDUM forms a part of the BIDDING AND CONTRACT DOCUMENTS and modifies the following documents:

PROJECT MANUAL dated March 12, 2020
DRAWINGS dated March 12, 2020
Addendum #01 dated March 17, 2020
Addendum #02 dated March 20, 2020
Addendum #03 dated March 27, 2020

Acknowledge receipt of the ADDENDUM in the space provided on the FORM OF PROPOSAL

THE BID DATE FOR THIS PROJECT IS - APRIL 9, 2020 AT 2:00 PM LOCAL TIME AT CAPE HENLOPEN SCHOOL DISTRICT'S, RICHARD A. SHIELDS ELEMENTARY SCHOOL LOCATED AT 910 SHIELDS AVE., LEWES, DELAWARE 19958

This ADDENDUM consists of twenty-four (24) pages not including the attachments:

1. GENERAL INFORMATION

1.1. Bid Submission

1.1.1. "In-person" bid/proposal submissions will no longer be accepted.

1.1.1.1. Bids must be sent by email to Brian.Bassett@cape.k12.de.us and one (1) full hard copy by mail. The hard copy does not need to be received by the bid submission deadline, but the email bid submission must be received timely or the bid will be rejected. All emails **must** have in their subject line which contract they are bidding. Example "Contract 1 Site Work R. Shields Elementary School" or you may risk not being read.

1.2. Bid Opening

1.2.1. Interested parties can log into listen/watch by utilizing [www.Zoom.us](https://www.zoom.us) Guests will not be admitted into a facility for a bid opening. Bid openings will be recorded and posted to www.ryjson.com plan room and bids.delaware.gov. after the bid opening. A link and meeting ID will be sent to the email that was provided at the

Mandatory pre-bid meeting several days prior to the bid opening. It is the contractor's responsibility to set up their own Zoom account prior to the meeting.

2. PROJECT MANUAL – MODIFICATIONS

- 2.1. Specification Section 00 01 10 Table of Contents
 - 2.1.1. DELETE Specification Section 08 51 23 Aluminum Historical Replication Windows
 - 2.1.2. DELETE Specification Section 08 62 00 Unit Skylights
 - 2.1.3. ADD Specification Section 08 63 00 Metal-Framed Skylights
 - 2.1.4. ADD Specification Section 27 51 17 Public Address System
 - 2.1.5. ADD Specification Section 27 53 13 Wireless Clock System
- 2.2. Specification Section 00 11 16 Advertisement for Bid
 - 2.2.1. Section 00 11 16-1 Bid Time Revision: Bids are now due no later than **2:00pm electronically on April 9th, 2020.**
- 2.3. Specification Section 00 41 16 Bid Form
 - 2.3.1. Section 00 41 26 Bid Form – **Replace Bid Form in its entirety**
 - 2.3.2. Section 00 41 26-4 Bid Form – Added Alternate 11 – CLOCK SYSTEMS
 - 2.3.3. Section 00 41 26-4 Bid Form – Added Allowance 6 – for Contract 10 Drywall/Metal Stud to include in bid price
 - 2.3.4. Section 00 41 26-5 Bid Form – Added Unit Price No. 1.09 Removal of PCB contaminated ballasts
- 2.4. Specification Section 01 11 00 Summary of Work
 - 2.4.1. Section 01 11 00-8 Contract 1 Site Work Item BBB – DELETE paragraph in its entirety
 - 2.4.2. Section 01 11 00-13 Contract 2 Demolition Item FFF – ADD paragraph: “FFF. At existing 2nd floor classrooms that are being renovated, remove existing floor finish and underlayment’s down to original sub-floor. Original wood subfloor to remain.”
 - 2.4.3. Section 01 11 00-15 Contract 3 Concrete Work Item BB – REPLACE paragraph with: “BB. Provide interior and exterior ramps and pads noted on structural drawings complete.”
 - 2.4.4. Section 01 11 00-16 Contract 3 Concrete Work Item HH – REPLACE paragraph with: “HH. Provide coordination of testing of trenches that are opened and backfilled pertaining to your scope of work.”
 - 2.4.5. Section 01 11 00-17 Contract 4 Masonry Work Item C – Add to paragraph “Provide cutting of slot in existing and new masonry or concrete wall for roof flashing. Roofer to install flashing.”
 - 2.4.6. Section 01 11 00-18 Contract 4 Masonry Work Item T – Add to paragraph “Provide cement stucco of water table foundation and at exterior ceilings as noted.”
 - 2.4.7. Section 01 11 00-22 Contract 6 Carpentry & General Work Item A – DELETE from paragraph “08 51 23”
 - 2.4.8. Section 01 11 00-24 Contract 6 Carpentry & General Work Item II – DELETE from paragraph “historical aluminum windows or alternate Marvin windows” and REPLACE with “Aluminum-Clad Wood Windows”
 - 2.4.9. Section 01 11 00-25 Contract 6 Carpentry & General Work Item YY – DELETE from paragraph “Also provide removal of all existing seating and hardware.”
 - 2.4.10. Section 01 11 00-26 Contract 6 Carpentry & General Work Item MMM – DELETE paragraph added in Addendum One and REPLACE with “MMM at existing 2nd floor classrooms that are being renovated provide one layer of new ¾” plywood subfloor and also provide new 5/16” plywood or OSB underlayment. At each new door or door to remain, each room to receive one or two layers as required to approximately match the elevation of existing concrete subfloor in the corridor.
 - 2.4.11. Section 01 11 00-26 Contract 6 Carpentry & General Work Item NNN. - ADD Paragraph: “NNN. Provide repair of existing wood panel soffit along balcony edge in auditorium. Painting of wood soffit by Contract 13 Caulking/Painting.”
 - 2.4.12. Section 01 11 00-27 Contract 7 Roofing Item A – DELETE from paragraph “07 55 56”

- 2.4.13. Section 01 11 00-27 Contract 7 Roofing Item A – DELETE from paragraph “08 62 00”
- 2.4.14. Section 01 11 00-27 Contract 7 Roofing Item A – ADD to paragraph “08 63 00 – Metal Framed Skylight”
- 2.4.15. Section 01 11 00-27 Contract 7 Roofing Item C – ADD to paragraph “Mason will provide cutting of slot in masonry or concrete wall for roof flashing. Roofing contract to provide all flashing.”
- 2.4.16. Section 01 11 00-47 Contract 18 Electrical Item A – ADD to paragraph “27 51 17 – Public Address Systems”
- 2.4.17. Section 01 11 00-47 Contract 18 Electrical Item A – ADD to paragraph “27 53 13 – Wireless Clock Systems”

- 2.5. Specification Section 01 22 00 Unit Price
 - 2.5.1. Section 01 22 00-3 Section 3.1 Item I – ADD paragraph: Unit Price 1.09 Removal of PCB contaminated ballasts. Indicate additional cost for removal and proper disposal of ballasts which are not labeled as PCB free. Unit: Each

- 2.6. Specification Section 01 23 00 Alternates
 - 2.6.1. Section 01 23 00-3 Section 3.1– ADD paragraph: Alternate No. 11 Clock Systems. 1. BASE BID Provide the clock system as specified per specification 275000 Intercom and Clocks and on bid documents. 2. ALTERNATE: In lieu of 27 50 00 Intercom and Clocks system in base bid, provide cost difference for a specification 27 51 17 Public Address Systems and specification 27 53 13 Wireless Clock System, see addendum #04 for these specification, similar to: Valcom ClassConnect utilizing Sapling Wireless Clocks supporting Notifier Unified Network Protocol. The price should include the deletion of the backboxes for the Base work.

- 2.7. Specification Section 06 10 00 Rough Carpentry
 - 2.7.1. PART 1 - GENERAL
 - 2.7.1.1. Paragraph 1.2.A.: Add Subparagraph 4 as follows:
 - 4. Supplementary subflooring in existing second-floor spaces.
 - 2.7.1.2. ADD Paragraph 1.2.B. and subordinate subparagraphs as follows:
 - 1.2.B. Related Sections
 - 1. 06 16 00 Sheathing, for underlayments over supplementary subflooring.
 - 2.7.1.3. ADD new Paragraph 1.3 and subordinate subparagraphs as follows
 - 1.3 REFERENCES
 - A. American Plywood Association (APA)
 - 1. Voluntary Product Standard PS 1-19, Structural Plywood.
 - 2.7.1.4. RENUMBER remaining paragraphs.
 - 2.7.2. PART 2 - PRODUCTS
 - 2.7.2.1. ADD new Paragraph 2.6 and subordinate subparagraphs as follows:
 - 2.6 SUPPLEMENTARY SUBFLOORING
 - A. 4' x 8' wood panels with tongue-and-groove edges, complying with APA PS 1-19 or PS 2-18.
 - B. Panels shall bear APA Panel Trademark (grade stamp) for intended use.
 - 1. Panel Grade: Rated Sheathing.
 - 2. Span Rating: 24/16.
 - 3. Bond Classification: Exposure 1.
 - 4. Thickness: 0.703 inches.
 - 5. Product Standard: PS 1-19.
 - 6. Performance Category: 23/32.
 - 2.7.2.2. RENUMBER remaining paragraphs.
 - 2.7.3. PART 3 – EXECUTION
 - 2.7.3.1. ADD new Paragraph 2.6 and subordinate subparagraphs as follows:
 - 2.6 SUPPLEMENTARY SUBFLOORING
 - A. Locate and determine direction of existing joists under existing original subfloor.
 - B. Lay subflooring panels as follows:

1. Lengths perpendicular to joist direction.
2. Panel ends: Overlapping joists, spaced with 1/8" gaps between ends. Center gaps on centerlines of existing joists.
3. Panel edges: Tongue-and-groove edges engaged, spaced with 1/8" gaps between surface veneers.
4. Where panels abut existing subfloors indicated to remain, shim panels to the height required to allow the surfaces of the underlayment(s) to be installed over them to match the elevations of the subfloor surfaces to remain.

C. Fasteners

1. Type: Screw, #10 x 3 1/2", with coarse thread, bugle head, sharp point, and dacrotized finish.
2. End spacing: 6" on center, into existing joists.
3. Edge spacing: One fastener at each existing joist, approximately 16" on center. Verify joist locations in field.

2.7.3.2. RENUMBER remaining paragraphs.

2.8. Spec Section 06 16 00 Sheathing

2.8.1. PART 1 - GENERAL

2.8.1.1. Paragraph 1.2.A.: ADD Subparagraph 3 as follows:

3. Underlayment.

2.8.1.2. Paragraph 1.2.B.: ADD Subparagraphs 3 through 7 as follows:

3. Section 06 10 00 Rough Carpentry, for supplemental subflooring in existing second-floor classrooms spaces.
4. Section 09 65 16 Resilient Sheet Flooring, for underlayment preparation under resilient sheet flooring.
5. Section 09 65 19 Resilient Tile Flooring, for underlayment preparation under resilient tile flooring.
6. Section 09 65 36 Static-Control Resilient Flooring, for underlayment preparation under static-control resilient flooring.
7. Section 09 68 13 Tile Carpeting, for underlayment preparation under tile carpeting.

2.8.1.3. ADD new Paragraph 1.3 and subordinate subparagraphs as follows

1.3 REFERENCES

- A. American Plywood Association (APA)
 1. Voluntary Product Standard PS 1-19, Structural Plywood.
 2. Voluntary Product Standard PS 2-18, Performance Standard for Wood Panels.
- B. American Society for Testing and Materials (ASTM)
 1. F 1482: Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring.

2.8.1.4. RENUMBER remaining paragraphs.

2.8.2. PART 2 - PRODUCTS

2.8.2.1. ADD new Paragraph 2.5 and subordinate subparagraphs as follows:

2.5 UNDERLAYMENT

- A. 4' x 8' plywood conforming to APA PS 1-19 or oriented strand board panels conforming to APA PS 2-18, with faces and cores constructed to resist dents and punctures from concentrated loads, fully sanded.
- B. Panels shall bear APA Panel Trademark (grade stamp) for intended use.
 1. Panel Grade: Underlayment.
 2. Species Group Number: Group 1.
 3. Bond Classification: Exposure 1.

4. Thickness: 0.322 inches.
 5. Product Standard: PS 1-19 or PS 2-18.
 6. Performance Category: 11/32.
- C. Lauan plywood is not acceptable.
- 2.8.2.2. RENUMBER remaining paragraphs.
- 2.8.2.3. Paragraph 2.1.A.: ADD Subparagraph C as follows:
 - C. Underlayment: Conforming to APA Voluntary Product Standard PS 1-19 or PS 2-18.
- 2.8.3. PART 3 - EXECUTION
 - 2.8.3.1. ADD new Paragraph 3.3 and subordinate subparagraphs as follows
 - 3.3 UNDERLAYMENT
 - A. Install underlayment in accordance with ASTM F 1482.
- 2.9. Specification Section 07 42 33 Phenolic Wall Panels
 - 2.9.1. Paragraph 2.2, A, 3. Panel Thickness: DELETE "8mm (5/16")"
- 2.10. Specification Section 07 53 23 Ethylene-Propylene-Diene-Monomer (EPDM) Roofing
 - 2.10.1. Paragraph 1.1.A.: DELETE the phrase "substrate board," from all subparagraphs.
 - 2.10.2. Paragraph 1.2.A
 - 2.10.2.1.DELETE subparagraphs 2 and 3 in their entirety.
 - 2.10.2.2.RENUMBER remaining paragraphs.
 - 2.10.3. Paragraph 2.5.D.: REPLACE the word "substrate" with the word "board."
 - 2.10.4. Paragraph 3.4., INSTALLATION OF SUBSTRATE BOARD: DELETE paragraph in its entirety.
 - 2.10.5. Paragraph 3.5., INSTALLATION OF VAPOR RETARDER: DELETE paragraph in its entirety.
 - 2.10.6. RENUMBER remaining paragraphs.
- 2.11. Specification Section 07 72 00 Roof Edge Fall Protection Railing
 - 2.11.1. Paragraph 1.1.A.: DELETE Subparagraphs Nos. 1 and 2 in their entirety.
 - 2.11.2. Paragraph 2.4.B.: DELETE paragraph in its entirety.
- 2.12. Specification Section 07 42 13.13 Formed Metal Wall Panels
 - 2.12.1. Add this note to paragraph 2.2.A.2.h. FABRAL
- 2.13. Specification Section 08 33 23 Overhead Coiling Doors
 - 2.13.1. PART 1 - GENERAL
 - 2.13.1.1.Paragraph 1.2.A.: ADD Subparagraph 2 as follows:
 2. Coiling security shutter door.
 - 2.13.2. PART 2 - PRODUCTS
 - 2.13.2.1.ADD new Paragraph 2.13 and subordinate subparagraphs as follows:
 - 2.13 OVERHEAD COILING SECURITY SHUTTERS
 - A. Aluminum Light Duty Shutter
 1. Wall Mounting Condition:
 - a. Between jambs mounting.
 2. Curtain: Interlocking extruded aluminum slats constructed of .05 inch aluminum. Nickel plated, steel screws and end locks to retain curtain within guides and prevent lateral movement. Over 16 feet wide will come standard with plastic roller retainers to strengthen curtain.
 3. Finish:
 - a. Powder Coat: PowderGuard Premium
 - 1) PowderGuard Premium color as selected by the Architect.

4. Bottom Bar and Locking:
 - a. Aluminum compact bottom bar with vinyl bulb seal with coil side left and right slide locks. Powder coat to match curtain color selection. (standard).
 - b. Step angle attachment option.
5. Guides: Extruded aluminum channels with continuous PVC wear strips. Powder coat: color to match curtain.
6. Brackets: Steel plate to support counterbalance, curtain and hood. Powder coat to match curtain color selection.
7. Hood: Aluminum 2-piece square hood powder coated to match curtain color selection. Provide with intermediate support brackets as required. Hood with brackets; box sized to match manufacturer's recommendation based on door height.
8. Counterbalance: Extruded aluminum barrel housing counterbalance spring assembly.
9. Operation:
 - a. Electric tube motor with crank for emergency egress manual override.
10. Electric Motor Operation: Provide UL listed electric operator, size as recommended by manufacturer:
 - a. Operator Controls:
 - 1) Double throw hard wired wall switch.

2.14. Specification Section 08 51 23 Aluminum Historical Replication Windows

2.14.1. DELETE this spec section in its entirety.

2.15. Specification Section 08 52 13 Aluminum-Clad Wood Windows

2.15.1. Change Paragraph 2.3 C. 2. A. to read: Exposed Unfinished Wood Surfaces: Factory Painted.

2.16. Specification Section 08 62 00 Unit Skylights

2.16.1. DELETE this spec section in its entirety.

2.17. Specification Section 08 63 00 Metal-Framed Skylights

2.17.1. ADD this Spec Section in its entirety, attached to this addendum.

2.18. Specification Section 08 71 00 Door Hardware

2.18.1. ADD door B101A-1, which was added to sheet A-112 in Drawing Modifications of Addendum No. 3 Item 3.12.4 to hardware Set 33.0 on page 08 71 00-29.

2.19. Specification Section 11 66 23, Gymnasium Equipment

2.19.1. Paragraph 2.2.A.

2.19.1.1. REPLACE text of paragraph in its entirety with the following.

2.2.A. Acceptable Manufacturers: Subject to compliance with requirements, provide products by one of the following.

2.19.1.2. Under Paragraph 2.2.A., ADD new Subparagraph 1 as follows:

1. Porter Athletics Equipment Company.

2.19.1.3. RENUMBER remaining subparagraphs.

2.20. Specification Section 27 51 17 Public Address System

2.20.1. ADD this Spec Section in its entirety, attached to this addendum.

2.21. Specification Section 27 53 13 Wireless Clock System

2.21.1. ADD this Spec Section in its entirety, attached to this addendum.

3. **DRAWING MODIFICATIONS**

- 3.1. DRAWING C-511, SITE DETAILS: Add a note in the fence details: "All fencing is 4' high"
- 3.2. DRAWING AD001, GENERAL DEMOLITION – ARCHITECTURAL SITE PLAN
 - 3.2.1. Site Demolition Legend
 - 3.2.1.1. ADD Keynote No. 7 as follows
 - 7. EXISTING SCHOOL SIGN AT SAVANNAH ROAD AND SUSSEX DRIVE
 - A. REMOVE MEMORIAL STONE / PLAQUE INTACT. STORE FOR REINSTALLATION INTO NEW SITE SIGN. CONSTRUCTION MANAGER COORDINATE.
 - B. REMAINDER OF SCHOOL SIGN TO BE DEMOLISHED IN ITS ENTIRETY.
 - 3.2.2. Detail 1/AD001
 - 3.2.2.1. To lower left hand corner of detail, ADD tag for Keynote No. 7 with text, "NOT SHOWN THIS VIEW"
- 3.3. DRAWING AD120, SELECTIVE DEMOLITION – SECOND FLOOR PLAN
 - 3.3.1. Selective Demolition Key Notes: ADD Keynotes Nos. 4K and 4L as follows:
 - 4K. REMOVE EXIST FLOOR FINISHES, UNDERLAYMENT LAYERS, AND ORIGINAL WOOD FINISH FLOOR DOWN TO ORIGINAL WOOD SUBFLOOR TO REMAIN.
 - 4L. IN HATCHED AREA, REMOVE EXIST FLOOR FINISHES, UNDERLAYMENT LAYERS, AND ORIGINAL WOOD FINISH FLOOR OR 5/8" SUBFLOOR DOWN TO EXIST WOOD FRAMING TO REMAIN.
 - 3.3.2. Detail No. 1/AD120: REPLACE portions of detail with portions from Sketch No. A/SK-AD120.01.01 attached in this addendum.
 - 3.3.3. Detail No. 2/AD120: REPLACE detail in its entirety with Sketch No. A/SK-AD120.02.01 attached in this addendum.
- 3.4. DRAWING AD201, SELECTIVE DEMOLITION – EXTERIOR BUILDING ELEVATIONS
 - 3.4.1. All details
 - 3.4.1.1. In all detail number tags, CHANGE "A-201" to "AD201."
 - 3.4.1.2. DELETE Keynote No. ED14 EXCEPT for one instance in Detail No. 4-AD201 in which the keynote is pointing at the bubble.
- 3.5. DRAWING AD204, SELECTIVE DEMOLITION – EXTERIOR COURTYARD ELEVATIONS
 - 3.5.1. All details: In all detail number tags, CHANGE "A-204" to "AD204."
- 3.6. DRAWING A-102, NEW WORK – PARTIAL LOWER LEVEL – AREA B
 - 3.6.1. Detail No. 1/A-102: REPLACE portion of detail with attached Sketch No. A/SK-A-102.01.01.
- 3.7. DRAWING A-112, NEW WORK – PARTIAL FIRST FLOOR PLAN – AREA B
 - 3.7.1. New Detail No. 2/A-112: ADD detail from attached Sketch No. A/SK-A-112.02.01.
- 3.8. DRAWING A-121, NEW WORK – PARTIAL SECOND FLOOR PLAN – AREA A
 - 3.8.1. Keynote Legend – Floor Plan: ADD Keynotes Nos. 55 and 56 as follows:
 - 55. INSTALL SUPPLEMENTARY SUBFLOOR ON ORIGINAL WOOD SUBFLOOR TO REMAIN. INSTALL UP TO TWO LAYERS OF UNDERLAYMENT AS REQUIRED TO MATCH ELEVATION OF ADJACENT SUBFLOORS TO REMAIN.
 - 56. INSTALL SUPPLEMENTARY SUBFLOOR ON EXISTING WOOD FRAMING TO REMAIN. INSTALL UP TO TWO LAYERS OF UNDERLAYMENT AS REQUIRED TO MATCH ELEVATION OF ADJACENT SUBFLOORS TO REMAIN.
 - 3.8.2. Detail No. 1/A-121
 - 3.8.2.1. ADD Keynote No. 55 to the following spaces:
Comp Lab A202; Accel Learner A203; Reading A204; Math A205; 5th Grade Clrms. A206, A207, A208, and A209; 5th Grade Clrm./Flex A210; 3-5 Spec Ed. A214; IDF A215; and Elec. A215A.
 - 3.8.2.2. ADD a line across 5th Grade Collab A201, aligned with the north face of the existing corridor shown in Drawing No. AD120.

- 3.8.2.3. ADD a note with leader pointing to the added line, "APPROX EDGE OF EXISTING CONCRETE SUBFLOOR IN FORMER CORRIDOR, VIF LOCATION."
- 3.8.2.4. Above the added line, in 5th Grade Collab A201, ADD Keynote No. 56.
- 3.9. DRAWING A-122, NEW WORK – PARTIAL SECOND FLOOR PLAN – AREA B
- 3.9.1. CHANGE note located above column line 8 on East side roof area from "SEE 1/A-131 FOR ALTERNATE ROOF PLAN" to read "SEE 1/A-183 FOR ALTERNATE ROOF PLAN".
- 3.10. DRAWING A-123, NEW WORK – PARTIAL SECOND FLOOR PLAN – AREA C
- 3.10.1. Detail No. 1/A-123: REPLACE portion of detail with attached Sketch No. A/SK-A-123.01.01.
- 3.10.2. Detail No. 1/A-123: REPLACE portion of detail with attached Sketch No. A/SK-A-123.01.02
- 3.11. DRAWING A-130, NEW WORK – ROOF PLAN
- 3.11.1. REPLACE drawing in its entirety with attached Drawing No. A-130.
- 3.12. DRAWINGS A-201, A-202, A-203, and A-204
- 3.12.1. Elevation Material Keynotes: DELETE the words in Keynote C: "(6" wide rib)".
- 3.13. DRAWING A-201, PARTIAL BUILDING ELEVATIONS
- 3.13.1. In detail 4/A-201, delete note ED14.
- 3.14. DRAWING A-203, PARTIAL BUILDING ELEVATIONS
- 3.14.1. Detail No. 1/A-203: REPLACE portion of detail with attached Sketch No. A/SK-A-203.01.01.
- 3.14.2. Detail No. 2/A-203: REPLACE portion of detail with attached Sketch No. A/SK-A-203.02.01
- 3.14.3. Detail No. 8/A-203: REPLACE portion of detail with attached Sketch No. A/SK-A-203.08.01
- 3.15. DRAWING A-204, INNER COURTYARDS BUILDING ELEVATIONS,
- 3.15.1. Revise the first sentence in Key Note E19 to read: "NEW BRICK MASONRY INFILL AT EXISING OPENING WITH BRICK TO MATCH EXISTING BRICK".
- 3.16. DRAWING A-409, INTERIOR ELEVATIONS – GYM
- 3.16.1. Detail No. 5/A-409: ADD note, "INSTALL MOUNTING HARDWARE SPECIFIED IN PARAGRAPH 2.2.E.5. OF SECTION 11 66 23 (NOT SHOWN THIS VIEW) ON FURRING STRIPS. COORDINATE FURRING STRIP LOCATIONS WITH MANUFACTURER'S REQUIREMENTS."
- 3.17. DRAWING A-411, INTERIOR ELEVATIONS – AUDITORIUM
- 3.17.1. Elevation 7 change note "PROVIDE NEW STAGE FRONT SOFFIT, SEE DETAIL 5 A425" change to "4/A-410"
- 3.17.2. Delete detail 3/A411
- 3.18. DRAWING A-410, ENLARGED AUDITORIUM PLAN AND DETAILS
- 3.18.1. ADD sentence to existing Note 1 of the AUDITORIUM SEATING NOTES, to top right corner of sheet to read as follows: "...ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ROOM DIMENSIONS FOR FINAL FIXED AUDITORIUM SEATING LAYOUT."
- 3.18.2. CHANGE seat count in AUDITORIUM SEATING NOTES, to top right corner of sheet to read as follows:
- 3.18.2.1. TOTAL FIXED SEATS = 306
- 3.18.2.2. PERMANENT ADA WHEELCHAIR LOCATIONS: 8
- 3.19. DRAWING A-514, SECTIONS DETAIL
- 3.19.1. Replace the sheet with the attached Sheet A-514.
- 3.20. DRAWING A-515, SECTIONS DETAIL
- 3.20.1. Replace the sheet with the attached Sheet A-515.
- 3.21. DRAWING A-516, SECTIONS DETAIL
- 3.21.1. Replace the sheet with the attached Sheet A-516.

- 3.22. DRAWING A-517, SECTIONS DETAIL
 - 3.22.1. Replace the sheet with the attached Sheet A-517.
- 3.23. DRAWING A-518, SECTIONS DETAIL
 - 3.23.1. Replace the sheet with the attached Sheet A-518.
- 3.24. DRAWING A-519, SECTIONS DETAIL
 - 3.24.1. Replace the sheet with the attached Sheet A-519.
- 3.25. DRAWING A-520, SECTIONS DETAIL
 - 3.25.1. Replace the sheet with the attached Sheet A-520.
- 3.26. DRAWING A-521, SECTIONS DETAIL
 - 3.26.1. Replace the sheet with the attached Sheet A-521.
- 3.27. DRAWING A-522, SECTIONS DETAIL
 - 3.27.1. Replace the sheet with the attached Sheet A-522.
- 3.28. DRAWING A-523, SECTIONS DETAIL
 - 3.28.1. Replace the sheet with the attached Sheet A-523.
- 3.29. DRAWING A-524, SECTIONS DETAIL
 - 3.29.1. Replace the sheet with the attached Sheet A-524.
- 3.30. DRAWING A-526, SECTIONS DETAIL
 - 3.30.1. Replace the sheet with the attached Sheet A-526.
- 3.31. DRAWING A-527, MAIN ENTRANCE CANOPY DETAILS
 - 3.31.1. Replace the sheet with the attached Sheet A-527
- 3.32. DRAWING A-528, ENTRANCE CANOPY DETAILS
 - 3.32.1. Replace the sheet with the attached Sheet A-528
- 3.33. DRAWING A-612, WINDOW STOREFRONTS AND ELEVATIONS
 - 3.33.1. Window Type W27 is being changed from Storefront to Curtainwall to allow the use of manufacturers integral coping at the top of the window system; CHANGE text below window tag W27 to read as “ALUMINUM CURTAINWALL SYSTEM”
- 3.34. DRAWING A-613, WINDOW STOREFRONTS AND ELEVATIONS
 - 3.34.1. The following window types are being changed from Storefront to Curtainwall to allow the use of manufacturers integral coping at the top of the window system; CHANGE text below window tag W28, W29, W30, W32, and W34 to read as “ALUMINUM CURTAINWALL SYSTEM”
 - 3.34.2. CHANGE the total height of the following Curtainwall Window System to be 16'-0"; W28, W45, W30, and W32.
 - 3.34.3. Window Tags
 - 3.34.3.1. W30. A-613: REPLACE window detail with attached Sketch No. A/SK-A-613.W30
 - 3.34.3.2. W31. A-613: REPLACE window detail with attached Sketch No. A/SK-A-613.W31
 - 3.34.3.3. W32. A-613: REPLACE window detail with attached Sketch No. A/SK-A-613.W32
 - 3.34.3.4. W34. A-613: REPLACE window detail with attached Sketch No. A/SK-A-613.W34
 - 3.34.3.5. W36. A-613: REPLACE window detail with attached Sketch No. A/SK-A-613.W36
- 3.35. DRAWING A-614, WINDOW STOREFRONTS AND ELEVATIONS
 - 3.35.1. The following window types are being changed from Storefront to Curtainwall to allow the use of manufacturers integral coping at the top of the window system; CHANGE text below window tag CW02, W39, and W45 to read as “ALUMINUM CURTAINWALL SYSTEM”
 - 3.35.2. Window types W45:
 - 3.35.2.1. REPLACE window detail with attached Sketch No. A/SK-A-614.W45
 - 3.35.2.2. CHANGE the total height of the Curtainwall Window System W45 to be 16'-0”

- 3.36. DRAWING A-615
 - 3.36.1. ADD window sill and apron detail with attached Sketch No. A/SK-A-615.13.01.
- 3.37. DRAWING S102, PARTIAL LOWER LEVEL FOUNDATION PLAN AREA B
 - 3.37.1. S/SK.S102.01.01 – Add reinforced concrete foundation and wall for plumbing chase. See attached.
 - 3.37.2. Refer to section on attached sketch S/SK.S506.04.01
- 3.38. DRAWING S102, PARTIAL FOUNDATION PLAN AREA B
 - 3.38.1. S/SK.S102.01.01 – Add reinforced concrete foundation and wall for plumbing chase. See attached.
 - 3.38.2. Refer to section on attached sketch S/SK.S506.04.01
- 3.39. DRAWING S-112, FOUNDATION PLAN – AREA B
 - 3.39.1. Add the follow note on the plan between col. B & D and 12 & 13: “Provide 12’ x 16’ 1 ½” depressed concrete slab to receive freezer box flooring.
 - 3.39.2. ADD S/SK.S112.01.02 – Add section cut for steel roof curb. See attached.
 - 3.39.3. Refer to section on attached sketch S/SK.S517.06.01
- 3.40. DRAWING S506, FOUNDATIONS SECTIONS AND DETAILS
 - 3.40.1. Add S/SK.S506.04.01 – Section of new reinforced concrete foundation and wall for plumbing chase. See attached.
- 3.41. DRAWING S517, FRAMING SECTIONS AND DETAILS
 - 3.41.1. ADD S/SK.S517.06.01 – Section of new steel roof curb at perimeter of rooftop classroom, Alternate No. 9. See attached.
- 3.42. DRAWING M-114, NEW WORK – PARTIAL FIRST FLOOR – HVAC PIPING PLAN – AREA B
 - 3.42.1. ADD sketch M-SK-M114.01.01, see attached.
- 3.43. DRAWING M-124, NEW WORK – PARTIAL SECOND FLOOR – HVAC PIPING PLAN – AREA B
 - 3.43.1. ADD sketch M-SK-M124.01.01, see attached.
- 3.44. DRAWING FP-001, ABBREVIATIONS, LEGENDS & GENERAL NOTES
 - 3.44.1. GENERAL WORK NOTES:
 - 3.44.1.1. DELETE Note #5 in its entirety.
 - 3.44.2. SHEET NOTES
 - 3.44.2.1. ADD Note #5 to read “FOR PARTIAL FLOOR PLANS FIRE SUPPRESSION, AREA C – ALTERNATE No. 1 REFER TO FP-180.”
 - 3.44.2.2. ADD Note #6 to read “FOR OVERALL LOWER LEVEL FLOOR PLAN FIRE SUPPRESSION – ALTERNATE No. 2 REFER TO FP-182.”
- 3.45. DRAWINGS P-100, P-101, P-111, P-112, P-113, P-114, P-115, P-121, P-122, P-123, P-124, P-130, P-180, P181, and P-182.
 - 3.45.1. On all plan drawings CHANGE; SHEET NOTES #3 from “FOR PLUMBING DETAILS, REFER TO SHEETS P-501.” to read “FOR PLUMBING DETAILS, REFER TO SHEETS P-501 AND P-502.”
 - 3.45.2. ADD; SHEET NOTES to plan drawings P-180 and P-182.
- 3.46. DRAWING P-101, OVERALL LOWER LEVEL PLAN – SANITARY
 - 3.46.1. ADD Note “REFER TO DETAIL 4/P-501” to Equipment Bubble PP-2 at Elevator.
- 3.47. DRAWING P-111, PARTIAL 1ST FLOOR DOMESTIC WATER & SANITARY PLAN AREA-A
 - 3.47.1. CHANGE pipe labels on dashed piping in 2ND GRADE CLRM. A109 and CORR A101 from “...” diameter SAN” to read “...” diameter V”.

- 3.48. DRAWING P-113, PARTIAL 1ST FLOOR SANITARY PLAN AREA-B
3.48.1. CHANGE note “2” diameter DISCHARGE, REFER TO DETAIL 4/P-501.” pointing to discharge pipe between Columns JJ and KK to read “2” diameter DISCHARGE.”
- 3.49. DRAWING P-121, PARTIAL 2ND FLOOR DOMESTIC WATER & SANITARY PLAN AREA-A
3.49.1. REVISE flue and combustion noted located in EXIST COURTYARD B116E “6” diameter FLUE & COMBUSTION AIR DN. TO MECHANICAL ROOM, REFER TO 2/P121.” to read “... FOR CONTINUATION REFER TO 1/P-401.”
- 3.50. DRAWING P-130, OVERALL ROOF PLAN RAINWATER COLLECTION SYSTEM
3.50.1. CHANGE Pipe size of two (2) RWCs located near Columns II, 0.10 and KK, 0.10 from 3” diameter RWC to 4” diameter RWC. Refer to sketch P/SK-P130.01.01, see attached.
- 3.51. DRAWING P-401, ENLARGED MECHANICAL ROOM DOMESTIC WATER & SANITARY PLAN
3.51.1. ADD 3/4” diameter CW to FPH in Area Way. Refer to sketch P/SK-P401.01.01, see attached.
- 3.52. DRAWING P-404, ENLARGED 1ST FLOOR GANG TOILET PLANS
3.52.1. Detail 1/P-404: ADD TWR pipe from riser in toilet chase to pipe break outside toilet room, plan South.
- 3.53. DRAWING P-405, ENLARGED 2ND FLOOR GANG TOILET PLANS
3.53.1. Detail 4/P-405: CHANGE note “1-1/2” diameter SAN, 1-1/2” diameter V TO SINK (TYP.)” pointing to EWC in bottom left of detail to read “1-1/2” diameter SAN, 1-1/2” diameter V TO EWC (TYP.)”
- 3.54. DRAWING ED-100, LOWER LEVEL DEMOLITION PLAN – ELECTRICAL:
3.54.1. ADD the following to legend note #1: Refer to Integrated System drawing set for details.
- 3.55. DRAWING E-111, FIRST FLOOR PARTIAL LIGHTING PLAN – AREA A:
3.55.1. ADD one type “B” fixture. Refer to attached sketch E/SK-E111.01.01.
3.55.2. CHANGE type light fixtures in Corr. A100 to type “A2” and “A2”(E). Refer to attached sketch E/SK-E111.01.01.
- 3.56. DRAWING E-112, FIRST FLOOR PARTIAL LIGHTING PLAN – AREA B:
3.56.1. ADD emergency type “A3”(E) fixture. Refer to attached sketch E/SK-E112.01.01.
3.56.2. CHANGE type light fixtures in Corr. A100 to type “A2” and “A2”(E). Refer to attached sketch E/SK-E112.01.01.
3.56.3. ADD note to indicate type “V” fixtures to be mounted on Unistrut. Refer to attached sketch E/SK-E112.01.01
- 3.57. DRAWING E-113, FIRST FLOOR PARTIAL LIGHTING PLAN – AREA C:
3.57.1. ADD emergency type “A3”(E) fixture. Refer to attached sketch E/SK-E113.01.01.
- 3.58. DRAWING E-211, FIRST FLOOR PARTIAL POWER PLAN – AREA A:
3.58.1. REMOVE motion detector. Refer to attached sketch E/SK-E211.01.01.
- 3.59. DRAWING E-212, FIRST FLOOR PARTIAL POWER PLAN – AREA B:
3.59.1. ADD card reader and keypad. Refer to attached sketch E/SK-E212.01.01.
- 3.60. DRAWING E-213, FIRST FLOOR PARTIAL POWER PLAN – AREA C:
3.60.1. ADD exterior security camera. Refer to attached sketch E/SK-E213.01.01.
- 3.61. DRAWING E-601, SCHEDULES – ELECTRICAL:
3.61.1. LIGHT FIXTURE SCHEDULE: ADD the following equivalents:

- 3.61.1.1. Type A: Signify Ledalite 7406
- 3.61.1.2. Type A2: Mercury Lightstreams MLD2-M
- 3.61.1.3. Type A2E: Mercury Lightstreams MLD2-M
- 3.61.1.4. Type A3: Mercury Lightstreams MLD2-G
- 3.61.1.5. Type A3E: Mercury Lightstreams MLD2-G
- 3.61.1.6. Type B2: Signify Day-Brite 2TG
- 3.61.1.7. Type C: Pace Illumination Nimbus HPDL
- 3.61.1.8. Type CE: Pace Illumination Nimbus HPDL
- 3.61.1.9. Type D: MaxiLume HH6
- 3.61.1.10. Type DE: MaxiLume HH6
- 3.61.1.11. Type D2: MaxiLume HH6
- 3.61.1.12. Type D2E: MaxiLume HH6
- 3.61.1.13. Type D3: MaxiLume HH10
- 3.61.1.14. Type D3E: MaxiLume HH10
- 3.61.1.15. Type F: Signify Day-Brite FSS
- 3.61.1.16. Type FE: Signify Day-Brite FSS
- 3.61.1.17. Type GE: Signify Ledalite Chopstick
- 3.61.1.18. Type H: Lumos ALC
- 3.61.1.19. Type HE: Lumos ALC
- 3.61.1.20. Type J: CetroLux CRU
- 3.61.1.21. Type JE: CetroLux CRU
- 3.61.1.22. Type K: Signify Day-Brite Vaporlume
- 3.61.1.23. Type KE: Signify Day-Brite Vaporlume
- 3.61.1.24. Type L1: Mercury Lightshapes MLS2-22G
- 3.61.1.25. Type L2: Mercury Lightshapes MLS2-22G
- 3.61.1.26. Type L2E: Mercury Lightshapes MLS2-22G
- 3.61.1.27. Type L3: Mercury Lightshapes MLS2-22G
- 3.61.1.28. Type M: Precision Architectural Lighting MLS5
- 3.61.1.29. Type ME: Precision Architectural Lighting MLS5
- 3.61.1.30. Type N: Peachtree C10BLRF
- 3.61.1.31. Type NE: Peachtree C10BLRF
- 3.61.1.32. Type N2: Peachtree C9BLR-D
- 3.61.1.33. Type N2E: Peachtree C9BLR-D
- 3.61.1.34. Type R: TPR Westflex/TPR UX8 DMX Controller
- 3.61.1.35. Type S1: NLS Lighting VUE Series
- 3.61.1.36. Type S2: NLS Lighting VUE Series
- 3.61.1.37. Type T: Mercury Lightshapes MLS2-DISQ
- 3.61.1.38. Type TE: Mercury Lightshapes MLS2-DISQ
- 3.61.1.39. Type X: Evenlite Sentry
- 3.61.1.40. Type Y: DuraLamp Intellistrand

3.62. Drawing E-700, SITE PLAN – ELECTRICAL:

- 3.62.1. ADD partial enlarged site plan location and site sign lightings. Refer to attached sketch E/SK-E700.01.02.

4. **CLARIFICATIONS/ RESPONSES TO RFI**

RFI 01

Question: 3. Selective Demo Part 3.5 – Is it expected that utility disconnects will require a bypass to maintain services.

Answer: Disconnect to source; temporary water will be needed for others.

RFI 02

Question: 1. In Sheet S-123 at column lines KK-LL, 0.1-0.3 there are 2 details referencing 2/s-522 & 1/S-523. However, the structural drawings seem to end on S-519. Could you provide some clarification?

Answer: Please refer to Drawings Nos. S-522 and S-523 issued in Addendum 3.

RFI 08

Question: 1. The following items are listed in the specific scope of work for contract A-14 Casework, but cannot be found on the contract documents. Please verify if each item is intended on the Shields ES project or not:

- Bathroom Casework
- Library Shelving
- Laminate shelving in closets – What closets?
- Literature distribution equipment
- Media shelving
- Science lab casework and fixtures
- Laminate or solid surface window sills – All shown are wood
- Laminate and wood wall panels – Wood wainscot by GC package

Answer: All parts of this question were answered in Addendum No. 3, except “Laminate or solid surface window sills – All shown are wood.” Window sills and aprons shall be wood; see sketch A-SK-615.13.01 above in Drawing Modification

RFI 09

Question: 1. Item #73 in the 11 40 00 Specification states the walk-in are to be floorless for installation on insulated and finished building floor. Drawing FS-107 shows a detail of the walk-in with a floor. Can you please clarify.

Answer: See this Addendum for additional information.

RFI 11

Question: 1. The paving details call out for light-duty and heavy-duty paving. Can it be clarified which areas are to be paved as such?

Answer: The east parking area is light duty. The Savannah Rd entrance drive perimeter drive around east parking and all bus parking paving is heavy duty.

RFI 12

I can locate two rolling grilles B122-3 and B-122-4 and a counter door B-122-6 all located in the kitchen area. I cannot find any rolling door as listed as type O. Also, no loading dock bumpers. The specifications are there but not on the drawings. My questions are the following:

Question: 1. Are there any written specifications for the rolling grilles? If not, I will just bid based on what I can find on drawings.

Answer: See Specification Section 08 33 23 Overhead Coiling Doors in Project Manual – Modifications above in this Addendum.

Question: 3. I am assuming the contracts A-6 are the contracts bidding the coiling products correct?

Answer: Yes, Contract 6 Carpentry & General Work is to include.

RFI 13

Question: 1. What is the elevation the site contractor will need to prepare the proposed building pad to? Is there a basement? What part of the proposed building is a basement and what is the FFE or the basement?

Answer: See C-121, C-140 to C-143, list Ex. FF relationship to Arch. Elevations. Refer to Arch Plans.

Question : 2. Is there any entrance/DOT work for the entrance on Sussex drive?

Answer: Sussex Drive is a City street. The entrance on Sussex Drive is to be constructed as shown on the site and grading plans.

Question 3. What depth of topsoil respread shall be assumed?

Answer: Per spec page 31 32 00-2, Item 3.2 A, “Topsoil shall be uniformly distributed on the designated areas and it shall be a minimum depth of 4 inches after firming.”

Question: 4. With the playground area, is the site contractor to grade and topsoil that area?

Answer: Yes, School District then provides Playground equipment and surface.

RFI 14

Question: 1. Referencing Contract No. 6 Carpentry & General Works F: Provide all exterior building signage, plaques and cast letters complete. There are no specs for any signage. Will specs be provided?

Answer: At main entry canopy provide cast aluminum dimensional letter signage: metal letters shall be cast aluminum, Helvetica style font, 34" high, 1 ½" deep as manufactured by Gemini Inc. or equal. Finish shall be baked enamel, opaque white - finish back of letters. Provide double rail mount installation.

Question: 2. Referencing Contract No. 6 Carpentry & General Works JJ: Provide all signage and cast letters, ADA signage, directories, site LED signs and plaques for complete system including wood blocking. Provide Pin mounted lettering and aluminum panel sign. There are no specs for any signage. Will specs be provided?

Answer: At main entry canopy provide cast aluminum dimensional letter signage: metal letters shall be cast aluminum, Helvetica style font, 34" high, 1 ½" deep as manufactured by Gemini Inc. or equal. Finish shall be baked enamel, opaque white - finish back of letters. Provide double rail mount installation.

Question: 3. Referencing Contract No. 6 Carpentry & General Works UU: Provide impact wall protection and corner guards complete. There are no specs for any wall protection and/or corner guards. Will specs be provided?

Answer: There are no impact wall protection and corner guards in the project.

RFI 15

Question: 1. Summary of work, contract 6, item J calls for visual equipment. What equipment does this refer to? There are no specifications calling out for visual equipment.

Answer: Delete Reference

Question: 2. Contract 6, Item UU impact wall protection, will this be required?

Answer: Delete Reference

Question: 3. Contract 6, Item XX cornice, cupola and wood trim. Can footage be issued along with profile and species?

Answer: No square footage; refer to drawings.

Question: 4. Contract 6, Item ZZ provide finish and patching of existing hard wood floors. Can roof numbers and square footage be provided?

Answer: No square footage; refer to drawings.

Question: 5. Drawing A-122, calls out to reference sheet A-131. There is no drawing A-131. Please advise.

Answer: See drawing A-122 revision in Drawing Modifications above in this Addendum.

Question: 6. Contract 6, Item YY, states to demo fixed seating. Will this fall under contract 6 or contract 2?

Answer: Contract 2 Demolition, reference has been deleted from Contract 6 scope.

Question: 7. Contract 6, Item ZZ calls for court striping, would contract 13 own the striping?

Answer: Contract 6 Carpentry & General Works provide.

Question: 8. Specification 077200 calls for roof railing. Which contract owns the railing?

Answer: Contract 7 Roofing Provides.

Question: 9. Will contract 6 own caulking historical window and caulking interior and exterior?

Answer: Yes.

Question: 10. Specification section 085123, item 33 calls for testing of windows. Will this be required? If so, what testing agency performs this type of air tests and pays for the test?

Answer: Bid as Documented

Question: 11. Specifications are needed for decorative metal enclosures.

Answer: No decorative metal enclosures in this Project.

Question: 12. Drawing A-11 floor plan note 11 refers to sheet A-414. This drawing is not in our set of plans.

Answer: See RFI above this Addendum.

Question: 13. Will interior window trim be white oak?

Answer: See RFI 08 Question 1 response above in this Addendum.

Question: 14. Drawing A-411 detail 7 reference to sheet A425, there is no drawing A425. Please advise

Answer: See this addendum for additional information

Question: 15. Drawing A-411 showing 1x4 popular wood strips, can details be provided on how this is attached?

Answer: Bid as Documented

Question: 16. Drawing A-411 detail 3 showing chair rail, can locations be given?

Answer: Answer: See this addendum for additional information

Question: 17. Drawing A-411 shows 5/4 graspable handrail. Shapes, species and footage are needed.

Answer: Bid as Documented

Question: 18. Specifications call for stoves, washers, dryer and microwaves, can quantities be given? None are shown on drawings.

Answer: See RFI 06 Question 1 response above in Addendum No. 3.

Question: 19. Drawing A-201 can profiles of the GFRC trim be given? Also, are we only going to replace 33LF on the building?

Answer: Bid as Documented

Question: 20. Specification 096453 calls to refinish steps, where are these located?

Answer: Bid as Documented

Question: 21. Specification 096453 callings for sleepers and plywood drawing showing 1-layer plywood. Please advise

Answer: Bid per detail 5/A-410.

Question: 22. Specification 096453 calls to remove hardwood floor and reinstall. Locations are needed.

Answer: Existing Stage floor shall remain.

Question: 23. Will the back of the stage and auditorium wood floor be refinished?

Answer: Yes

RFI 16

Question: 1. Drawing A130 Roof System Notes states White EPDM while spec 075323-2.2-A-3 states Black EPDM. Which color of EPDM should we provide?

Answer: EPDM color shall be black.

Question: 2. Drawing A130 Roof System Notes states for all insulation to be mechanically fastened where spec 075323-3.6 states base layer of insulation to be mechanically fastened and subsequent layers to be adhered. Please advise how we should install the insulation.

Answer: Base layer of insulation to be mechanically fastened and subsequent layers to be adhered as noted in specification section 07 53 23 paragraph 3.6. See Drawing Modifications above in this Addendum.

Question: 3. Spec 075323 also states that the base layer of insulation should be 1.5". Can this be changed?

Answer: Provide a minimum base layer of insulation of 1.5", but proposed thickness shall not exceed roof system manufacturer's recommendations.

Question: 4. Spec 075323-3.5 describes installation of a vapor barrier. Is a vapor barrier required?

Answer: See Project Manual – Modifications above in this Addendum.

Question: 5. Spec 075323-3.4 describes installation of a substrate board. Is a substrate board required?

Answer: No. See Project Manual – Modifications above in this Addendum.

Question: 6. Spec 075556- Fluid Applied Protected Membrane Roofing is not detailed in any drawings. Please advise where this is being utilized?

Answer: Specification Section is not required, See Addendum No. 3, Item 2.5.

Question: 7. Regarding the asbestos abatement on Roof #5, will the ACM contractor remove the flashings and make watertight the roof system prior to the roofer starting on the project?

Answer: All Hazards material will be removed. If contractor think a material is hazardous, they must contact RYJ.

Question: 8. Regarding Alternate #6- On drawing A130 it states to mechanically fasten the coverboard to the decking. Spec 075556 states to install coverboard using low rise foam adhesive. How should we proceed?

Answer: Install Alternate #6: coverboard as described in Spec 07 55 56 using a low-rise foam adhesive. See Drawing Modifications above in this Addendum.

Question: 9. Regarding Alternate #9- On Drawing A130 it states the roof system is fully tapered over metal deck. Drawings on A183, regarding the alternate #9, details some decking to be concrete. Will the insulation on the concrete deck area need to be tapered? It also states on drawing A183 that the steel deck, outside of the concrete area, will now be sloped. Are we to assume the decking will not require tapered insulation with the alternate?

Answer: Drawing A-130 will be altered to reflect the flat concrete deck shown in the structural drawings. Detail 2/A-183 will be altered to reflect the flat metal deck shown in the structural drawings. The insulation on both decks shall be tapered. See Drawing modifications in this Addendum.

Question: 10. On drawing A130, the small entrance canopy for Area C, calls for RS-3 which is a coverboard mechanically fastened to the deck. On drawing A526, it details to be fully tapered insulation. How should we proceed?

Answer: Refer to Addendum No. 2, Item 3.5.2.1.2.

Question: 11. Spec 077200 is calling for a Non-Penetrating Kee Guard Rail System. The only guard rail at the roof area is provided with Alternate #9 but that alternate references spec 55200. Is the Kee Guard Rail System required?

Answer: Yes. See Drawing Modifications in this Addendum.

Question: 12. On drawing A130, Area C, 1 roof drain does not detail a scupper (SC) but there seems to be 2 random scuppers (SC) on a different roof area. Should any changes occur for this drawing. (Drawing attached with notations)

Answer: Yes. See Drawing Modifications in this Addendum.

RFI 17

Question: 1. Who is responsible for utility disconnects?

Answer: See Contract 2 Demolition Summary of Work Item P.

Question: 2. Will water be available at no cost for dust suppression?

Answer: Yes.

Question: 3. Who is responsible for the demolition permits and fees?

Answer: Contract 2 Demolition

Question: 4. Will the owner install a site fence for security?

Answer: Yes.

Question: 5. Any items for salvage?

Answer: Will be noted on drawings if required.

Question: 6. What is the estimated start date for demolition?

Answer: April 2020.

Question: 7. What is the project duration allowed for demolition?

Answer: 6 weeks; demo small garages first.

Question: 8. Considering some utility will be reused, please clarify how all utilities are to be closed?

Answer: See Contract 2 Demolition Summary of Work Item TT.

Question: 9. Will the owner consider a unit rate for PCB ballast if identified?

Answer: See added unit price on bid form.

Question: 10. What contractor is required to recover refrigerant?

Answer: See Contract 2 Demolition Summary of Work Item DD.

Question: 11. Please confirm the demolition contractor is responsible for the removal of the underground fuel oil tank in accordance with DNREC regulations?

Answer: Underground Fuel Oil Tank Removal is under separate contract

Question: 12. Please confirm the demolition contractor is responsible for the removal of the above ground fuel oil tank in accordance with DNREC regulations?

Answer: Ground Fuel Oil Tank Removal is under separate contract

Question: 13. Please confirm the demolition contractor is responsible for the removal of the propane tank in accordance with DNREC regulations?

Answer: Propane Tank Removal is under separate contract.

Question: 14. Please clarify the MEP contractor will handle cutting new openings related to the new work?

Answer: Yes.

Question: 15. Please confirm the roofing contractor will handle all roofing demolition work?

Answer: Yes

Question: 16. Does the demolition contractor removal all of the old windows or is that on the new window installer?

Answer: See Contract 2 Demolition Summary of Work Item LL

Question: 17. Is the demolition contractor required to board up any openings?

Answer: See Contract 2 Demolition Summary of Work Item AAA

Question: 18. Please confirm the mason will handle all exterior masonry demolition and restoration on the original building.

Answer: Yes, select demolition only; Demo contract to remove masonry where whole sections of building are to be demolished.

Question: 19. With respect to the lower level firing range, is any soil assessment required to address the soils for lead?

Answer: All soil assessments need will be under a separate contract.

Question: 20. Please clarify the schedule so the site work and demolition contractor do not have a conflict over work areas and site access.

Answer: CM will coordinate so both contracts can work together.

Question: 21. Section 02 40 00 part 1.1 – says demo includes removal of the building, pads, sidewalk, etc. but Vol I notes says that all concrete outside is part of site work. So is demo contractor responsible for outdoor sidewalks and concrete or is site worker

Answer: See response to RFI 01, Question: 1, in Addendum No. 3.

Question: 22. Section 02 40 00 part 3.1 – says remove existing structures to 3 ft below proposed finished grade or 1 ft below ex grade but the plans and specs say that all structures should be removed in their entirety including foundations.

Answer: See response to RFI 01, Question: 2, in Addendum No. 3.

Question: 23. Selective Demo – Part 3.5 – Is it expected that utility disconnects will require a bypass to maintain services?

Answer: See response to RFI 01, Question: 3, above in this Addendum.

RFI 18

Question: 1. There is a note on page A112 in Stair well D "Curtainwall will not be 1hr rated". This curtainwall doesn't appear to be noted in the window elevations nor does it have a door tag. You can see it again on 6/703

Answer: Review all addendums for this information

Question: 2. It appears to be a pair of doors with 5 sidelights about 17' wide based on the floor plan

Answer: Review all addendums for this information

Question: 3. Can you please clarify this curtainwall and if it is to be priced?

Answer: Bid it as documented.

RFI 19

Question: 1. Addendum #3 made changes to the basketball backstops on the project. Can it be confirmed that this is what is required for this scope of work:

- a. Per keynote #23 on drawing A-112, the four backstops on the north/south/west walls are existing to remain and will only receive new basketball goals/nets as included in Section 116623 from Addendum #3, paragraph 2.1?
- b. Per keynote #54 on drawing A-112, the two backstops on the east wall are to be taken down, stored and reinstalled when the gym is ready but with only new basketball goals/nets as included in Section 116623 from Addendum #3, paragraph 2.1?

Answer: Question 1a. Correct. Question 1b. Correct.

Question: 2. Can pictures of the existing basketball backstops on the east wall be provided to see the feasibility of removing and reinstalling these backstops?

Answer: See photograph on attached sketch A-SK-A112.02.01.

Question 3. Would it be possible to offer a price for new basketball backstops on the east wall in lieu of reinstalling the existing, as this would be more cost effective than trying to store parts/pieces for a long period of time and then reinstalling them in the original configuration? If so, can you provide the minimum requirements for the hoop (backboard type, manual/electric winch, safety strap, height adjuster, etc.)?

Answer: Bid as shown on Construction Documents.

Question: 4. Section 116623 from Addendum #3, paragraph 2.2.A. has a model number that is not present on Porter Athletics Equipment Company's website but paragraph 2.2.E.2. specifies polyurethane foam and the details on a standard wall pad. Can you confirm the pad should be manufactured based on the specification details of paragraph 2.2. and not the non-existing model number from Porter?

Answer: Bid as shown in specification section 11 66 23 (previously replaced in Addendum 3), Paragraph 2.2.E. See also Project Manual – Modifications above in this Addendum.

Question: 5. Section 116623 from Addendum #3, paragraph 2.2.E.5 indicates the installation of wall pads to be "concealed mounting z-clips and 1-inch bottom fabric attachment flange with exposed fasteners." Drawing A409, detail 5 shows wall pads attaching to furring strips which are not necessary. Can you please confirm which method of attachment is desired for the wall pads? (NOTE: Concealed Z-clip attachment on the top and bottom of wall pads would be recommended)?

Answer: Mounting shall be as specified in Paragraph 2.2.E.5. See also Drawing Modifications above in this Addendum.

Question 6. Section 116623 from Addendum #3, paragraph 2.2.E.7 indicates custom graphics as indicated on drawings. Drawing A409 indicates (6) 2'-0" wide wall pads are to receive custom graphics. Can you please confirm that only (6) 2'-0" wide wall pads are to receive customs graphics?

Answer: That is correct, only (6) 2'-0" wide wall pads are to receive customs graphics.

Question 7. Section 116653 indicates that the specified curtain is operated by a ¾ HP motor; however, there is no safety device specified for the curtain motor. In the event of a motor failure, a curtain lock will prevent the curtain structure from falling to the floor. This curtain lock is highly recommended with any motorized divider curtain. Can you please confirm if a curtain lock should be provided for the motorized curtain in section 116653?

Answer: Thanks for the recommendation, provide Gymnasium Divider Curtain as specified in the Project Manual.

Question 8. Will Performance Sports Systems be an acceptable manufacturer for the gymnasium dividers in section 116653? A substitution request is attached.

Answer: See Substitution Request, below in this Addendum.

Question 9. Will Hussey Seating Company be an acceptable manufacturer for the fixed audience seating in section 126100? A substitution request is attached

Answer: See Substitution Request, below in this Addendum.

RFI 20

Question: 1. Where areas of the structure are to be removed and there is exposed plaster applied to the brick, will this plaster need to be removed?

Answer: Yes, demolition contractor to provide removal.

RFI 21

Question: 1. Existing Bldg. Elevation Keynote E01.Stone Parapet coping.

1. Clean disassembled units.
2. 2. Install salvaged stone coping.
3. 3. Coordinate work with masonry repair at parapet wall and installation of new roofing and through wall flashing.
4. TYP 100% will all the head joints in stone coping point with mortar or caulk? Please provide details. If all the head joints require caulk, under what contract will caulking of these joints be required?

Answer: Refer to changes to keynote R10/Drawing A-130 noted under DRAWING MODIFICATIONS Section above. Sealant to be provided under Contract 13.

Question: 2. Will all horizontal joints in salvaged stone coping to dissimilar materials point with mortar or caulk? Please provide details. If all the horizontal joints caulk under what contract will the caulking of these joints be required?

Answer: Provide sealant. Provide backer rod where required.

Question: 3. Existing Bldg. Elevation Key E13 Stone Field Masonry Repairs.

1. Stone Units Crack Repair – Assume 10LF?
2. Stone Units Patch Repair – Assume 100 Sq. Inches?
3. Stone Unit Replacement at Pilaster Base – assume 1 base unit?
4. Heavy Soiling spot cleaning – pollutant crust, plant and fungal staining, paint and sealant – assume 3 sf.? Does this mean figure 3 sf. Of sealant per pilaster?

NOTE: Detail 8 on A330 Stone Patching @ Anchor/Reinforcement Locations shows Backer Rod and Sealant Tool to match original Joint profile. The joints in the Stone Pilasters have mortar in them now. Will all the joints in the Stone Pilasters E13 get repointed or be raked for sealant? If these joints get raked out for sealant the raking out of the mortar will be by Contract A4 Correct? If sealant is required at the joints in the Pilasters E13 under what contract will sealant be required.

Answer: Keynote E13 refers to all stone masonry at elevations. Item E13.3 is the only pilaster specific keynote. All quantities are as noted for each item. Quantity in Item E13.4 refers to heavy spot soiling cleaning of various types of stains at all elevations, not just sealant stain.

Repointing/raking/sealant at pilaster will occur only if stone unit requires patching at existing anchor location.

E13 does not call for repointing of all stone pilaster joints.

Sealant to be provided under Contract 13.

Question: 4. Existing Bldg. Elevation Keynote E14 Cornice.

1. Clean existing Cornice – TYP 100%
2. Reset existing cornice at one location on west elevation – assume 10 LF.
3. Construct new GFRC Cornice to match existing at location of removed addition – assume 33 LF. Will there be any caulking required at E14 Cornice? If yes, please provide specific locations and details.

Answer: Joints between cornice sections to be caulked with flexible sealant to create a watertight joint but allow for movement. Comply with manufacturer requirement for preparation of joints, including primers, use of backer rod, based on section joints configuration, and sealant application.

Provide backer rod and sealant at joints between brick masonry and cornice. Comply with manufacturer requirements.

Question: 5. Existing Bldg. Elevation Keynote E18 Existing Sills.

1. Heavy Soiling Cleaning: Atmospheric pollutant crust, rust, plant and fungal staining; sealant – TYP 5% surface at each window – assume 5 Sf. Total.
2. General Cleaning Stone – TYP 100%

NOTE: Most of the joints in the joints in the existing stone sill have mortar in them now. Please clarify what sealant will be required at E18 Existing sills. Under what contract will sealant be required, please provide details.

Answer: Keynote E18.1 refers to sealant as one of the stains/soiling to be removed at select locations.

Question: 6. Existing Bldg. Elevation Keynote E20 Exposed concrete Wall

1. Patch Cracks – Typical 10 LF.

2. Heavy Soiling Cleaning: Atmospheric, pollutant crust, plant and fungal staining, sealant – assume 100 SF total.

3. General Cleaning – TYP 100%

Please clarify what sealant will be required at E20 exposed concrete wall. Under what contract will sealant be required, please provide details.

Answer: Keynote E20.2 refers to sealant as one of the stains/soiling to be removed at select locations.

Question: 7. Contract A15 Kitchen Equipment will be responsible for all Sealant under this contract correct?

Answer: Provided under Contract 13.

Question: 8. Detail 2/A-330 at Expansion Joints, existing Bldg. repair details show Backer Rod and Sealant Tool to match original joint profile. Please show all locations where these will be required. Under what Contract will this sealant be required?

Answer: Provided under Contract 13.

Question: 9. There is a Stone Band at the bottom of the Bldg. that sits on the concrete base. (See Picture) not these joints in the Stone Band have mortar in them. Will any sealant be required at this Stone Band? If yes, under what contract will this sealant be required? Please provide details.

Answer: Provide sealant. Provide backer rod where required. Provided under Contract 13.

Question: 10. 1 on A201 Partial Exterior Elevation South. NOTE There are Stone Panels at the Front Entrance that have mortar in them. Will any sealant be required at these Stone panels at the Front Entrance? If yes, under what contract will sealant be required? Please provide details.

Answer: Provide sealant. Provide backer rod where required. Provided under Contract 13.

RFI 22

Question: 1. In Addendum #1, section 2.4.7 mentioned to provide ½” plywood underlayment for second story under flooring. As noted in addendum drawing, I did not see any drawings to substantiate this please clarify.

Answer: See this addendum for information on the second floor underlayment.

Question: 2. On Sheet A-411 it states, provide new stage front soffit, see detail 5 A425. There are no A425 drawings in my plans. Please clarify.

Answer: See this addendum for information more information.

Question: 3. What contract owns the horizontal metal panels on drawing A203?

Answer: Contract 7 Roofing

Question: 4. What contract owns removing the auditorium seating? It is mentioned in B2 & B6 Scope of work?

Answer: Contract 2 Demolition; see revision to Contract 6 scope of work.

RFI 23

Question: 1. Spec section: 04200-Part2-Products 2.4-B states that the CMU must be manufactured with water repellent. Is this for both the regular CMU & the DCMU? Please Clarify.

Answer: There is no DCMU on this project

Question: 2. Spec section: 04200-Part2-Products 2.6 Brick-B7 calls for 4”x4”x16” units however the drawings call for a 4”x4”x12” unit. Please Clarify.

Answer: The bricks should be 4” x4” x16”.

Question: 3. Wall section A-10/703 is missing from sheet A-102. Please Clarify.

Answer: Not sure what the question is. Stair section 10/703 is a section thru the steps on the first floor.

Question: 4. Detail S-1/504 does not show any vertical rebar. Please Clarify. Please Clarify if this is required.

Answer: The vertical rebar for detail 1/S-504 is the same as detail 2/S-504.

Question: 5. Detail 1/S-504 on sheet S-112 on column line #L in area “B” calls for a 12” wall according to the wall schedule. However, detail 3/A-312 & 4/A-311 show a 16” (2-8” CMU). Please Clarify.

Answer: Wall along column line L, 2.9 and J to be as shown in section 4/ S507 and 6/S507. Detail 1/S504 is incorrect at this location and will be removed from the plan.

Question: 6. On Sheet S-101 calls out a wall type “A” according to the wall schedule on sheet S-101. However detail ¾-311 appears to show a 14” (1’-8” CMU & 1’-6” CMU). Please clarify.

Answer: Wall along column line L, 2.9 and J to be as shown in section 4/ S507 and 6/S507.

Question: 9. Detail 4/S-503 shows a 6” Split face unit on the exterior , however detail 3/A-319 shows brick veneer. Please Clarify.

Answer: Detail 3/A-319 is correct.

Question: 11. Detail 2/A-415 On sheet A-101 is listed in Rm A004 (Fire Pump Rm) . However the elevation shows 2nd grade C1 rm/flex (A102)-south elevation. Please Clarify.

Answer: Delete detail 2/A-215 on this sheet.

Question: 12. Exiting stair "E" on sheet A-102 appears to show a new 8"CMU wall. However this is not on the structural drawings or no wall description is given. Please Clarify

Answer: Disregard on A-101 in stair the indication of a new *" CMU this is an existing wall.

Question: 13. Under which contract# does the refinishing of the window jambs with plaster as shown in detail 2/A-633 Please clarify.

Answer: Contract 10 Drywall/Metal Stud; see item Q of their scope.

Question: 14. Under contract #4 the scope of work, line item "T" states that this contract is responsible for the plaster. Shouldn't this be the responsibility of contract #10 as noted in the scope of work for that contract (line item "Q"

Answer: Contract 4 Masonry is to provide all exterior cement plaster at entry ceiling, etc. See addendum 3, Detail 1 – A320

Question: 15. Under contract #4 the scope of work states in line item "T" that this contract is responsible for the grouting of new door frames in new and existing openings. Should contract #6 be responsible for grouting of existing door frames since there is no masonry work involved.

Answer: No, Contract 4 Masonry is to provide if required.

Question: 16. Details 4&5/A-616 for windows & storefronts do not provide adequate details for the current wall conditions, nor do they provide details for the jambs. Please Clarify

Answer: Bid the project as documented, existing wall construction detail is not available.

Question: 17. Details 3&4/A-515 on wall section 2/A-311 do not correspond with the actual details provided on sheet A-515. Please Clarify

Answer: See this addendum for information more information.

Question: 18. On sheet A-204 on the existing building elevations keynote E11 states to repair a total of 80LFt of cracks overall. Is this per this particular sheet, each detail or for the entire project. Please Clarify.

Answer: It is 80 LFT per each occurrence of keynote E11.

Question: 19. Window detail 10&10a on sheet A-611 have a blank jamb detail. Please Clarify.

Answer: Refer to addendum #03 for more information.

Question: 20. Does the new brick veneer on the North, & East elevation in the east inner courtyard receive the proposed brick provided in the spec, drawings or does it match the existing brick veneer on the south & west wall. Please Clarify.

Answer: Match the existing brick on the North, & East elevation in the east inner courtyard.

RFI 24

Question 1. We need details for the planter/paver area. Please provide a detail/specification for the pavers.

Answer: Bid as documented

Question: 2. Per our SOW we are to provide the playground equipment, please provide details for this.

Answer: Playground equipment and surface is to be provided by owner; see revision to Summary of Work.

Question:: 3. Provide a list or details for the site furnishings required per our SOW.

Answer: Delete reference to site furnishings

Question: 4. Provide details, height, for the playground fence and gates.

Answer: The fence and gates are 4' high.

Question: 5. Provide a project schedule so we can determine the timeline for the CCR inspections.

Answer: Construction to start May 2020 and is to be completed by June 2022.

RFI 25

Question: 1. On page AD100 note 4J says to open access for new plumbing and to remove spoils for new plumbing. Would this work fall under the demolition contractor or the plumber to remove/excavate for new plumbing in the lower level.

Answer: Contract 16 Mechanical will provide excavate and removal of portions of walls and slabs for plumbing work.

RFI 26

Question: 1. Please reference spec section 09 00 00. Under T-1 finish, Dilex-AHK cove is specified at Floor/Wall transitions. Can you please specify the material finish for this product? Please note that stainless steel is not an option for this product. If stainless steel is desired, we recommend Dilex-EHK.

Answer: Yes. Please use the Schluter Dilex-EHK. Stainless Steel.

Question: 2. Reference sheet A-401 and A-811. In gang bathroom A-114 and A-115, we note that T-3 is called out to be installed at sink wall through drawing A-811. However, elevations on sheet A-401 show

T-4. Please clarify which is correct?

Answer: A-811 & A-830 are correct. Floor and Wall field tile in gang bathrooms are to be T-3. (T-4 is wall tile on remaining tiled walls in bathroom.)

Question: 3. I don't see an enlarged restroom plan or elevations of restroom A116A as I do for the other restrooms. Can these be provided? Additionally, we need the ceiling height for this restroom. Please provide these as well.

Answer: Detail 3/A-404 is called out on sheet A-111 and on Detail 3/A-404 this Staff Toilet Room is noted as "Sim. Opp. Hand A116A. As noted on A-161 Ceiling Types "(X'-X)" ...Typical ceiling height is (10'-0") unless noted otherwise.

Question: 4. Per sheet A-830, we note that Tile is meant to be installed on the North wall of Corridor A116. Can you please clarify the location of the tile, specify the finish, and provide an elevation? Was this a mistake?

Answer: Corridor A-116 walls are to be P-23, per A-811. (This room was not updated on finish schedule A-830.)

Question: 5. We don't see any interior elevations for A216 & A217. Can you confirm elevations are typical as seen for A114 and A115? Can you also confirm ceiling height is 10'-0" AFF?

Answer: Interior elevations for A216 and A217 will be the same as A114 and A115. For ceiling height see drawings.

Question: 6. Can you please provide ceiling height for A116A, B101A, C104A, C106A, C115, C118A, C121A and C213? RCP says to reference interior elevations; however no elevations are provided for these toilet rooms.

Answer: For ceiling height see drawings.

Question: 7. For Alternate number 1, room C123A shows T-3 base per the room finish room provided in the drawings, however T-3 base is not mentioned anywhere in the 090000 specifications. Can you confirm that C123A is to have a matching T-3 base trim?

Answer: This is base bid (See answer below). REVISE: Floor and Base in C123A to be T-1.

Question: 8. Is C123A meant to be part of the base bid. We noticed it's the only room that is part of alternate which is also part of the finish schedule?

Answer: C123A is not within area of work – Alt. No. 1, per the scope line on A-180. It is shown on A-813 and finish schedule A-830, base bid.

Question: 9. Can you please clarify how we are to treat exposed edges of wall tile at toilet rooms? Are you looking for a metal edge trim? If so please specify manufacture, product, and finish.

Answer: Yes. Schluter – JOLLY. Finish: Chrome plated brass.

Question: 10. I don't see transitions between different floor finishes specified. Can they be provided?

Answer: Transition between Rubber or LVT & Carpet: See Finish Schedule 090000, page 9 after Rubber Flooring. Transition at bathrooms: Marble threshold.

Question: 11. Please reference specifications section 09 30 13. We noticed that the specified TNCA floor Installation method was F114 which includes a mortar bed and Epoxy grout. However, I don't see any depressed slabs at any of the toilet rooms in the structural drawings. Can you confirm that the Thickset Method, otherwise known as Mud Bed or Mortar bed is required at all bathroom floors? If a mortar bed is no longer required, please specify a new TNCA floor installation method.

Answer: Correction: Floor tiles are to be Thinset.

Question: 12. Is High Performance Grout acceptable for the installation of the floor tile in all areas in lieu of epoxy grout? Epoxy grout will add significant cost to the project which is completely unnecessary.

Answer: Yes.

Question: 13. Please reference specifications section 09 30 13. We noticed that the specified TNCA floor Installation method was F114 which includes a mortar bed and Epoxy grout. Does this mean mortar bed is required at stairs? The mortar bed is not shown on Enlarged stair sections and details.

Answer: Thinset.

RFI 27

Question: 1. Roofing Scope of Work Item V states Provide roof edge fall protection complete, does this pertain to Specification section 077200 Roof Edge Fall Protection Railing? If so please clarify where the product is to be installed, we could not find it on the drawings?

Answer: Yes, it is specification 07 72 00. See Drawing Modifications above this Addendum.

Question: 2. Specification Section 077100 Roof Specialties, paragraph 2.2 A. 2.b. states Finish: Three-coat fluoropolymer, can a standard Two-coat color from the Manufacturer's full range be considered? Please advise.

Answer: Two-coat fluoropolymer with manufacture's full range of colors options is acceptable.

Question: 3. Per Addendum #3 item 2.4, is the Substrate Board to be installed at all roofs or just at specific areas? Please advise.

Answer: See Project Manual – Modifications above in this Addendum.

Question: 4. Specification Section 075323-11 EPDM Roofing, Paragraph 3.5 Vapor Retarder, states providing either a polyethylene film or the Manufacturer's Self-Adhering Vapor Retarder, which type of Vapor Retarder is required? Will the Vapor Retarder be required at all roof areas or just specific areas? Please advise.

Answer: See Project Manual – Modifications above in this Addendum.

Question: 5. Specification Section 086200 Unit Skylights, Paragraph 2.3 B. states the unit size to be 90" x 90", but drawing A-130 note R11 states the existing curbs to receive new skylights are 10' 8" x 7' 4" and Drawing A-526 shows the Main Entrance Skylight to be 7' 4" x 8' 3", are we to use the measurements on the drawings or the specification for the unit sizes? Please clarify.

Answer: See Project Manual – Modifications above in this Addendum.

Question: 6. Roofing Scope of Work item W states Provide metal cornice disassemble, repair, patching and replacement, is this work as shown on Drawings AD-201 and AD-204 note ED14? If so what is the extent of this work, is all the existing cornice to be removed or just 10lf?

Answer: Existing cornice to remain except for 10 LF area highlighted on 4/A-201 – PARTIAL EXTERIOR ELEVATION – WEST – Omit reference to ED14 keynote at all other elevations.

Question: 7. After our site visit to the project it appears the cornice material where noted on AD-201 and AD-204, note ED14 is not metal but either a masonry / Drivit or GFRC type of material, what contract will own the work for note ED14 since it is not a metal cornice? Please advise.

Answer: There is no reference to metal in Keynote ED14. ED14 is only for 10 LF of cornice indicated by bubble at Detail 4/AD201; see Drawing Modifications above in this Addendum. Replacement cornice is GFRC. GFRC is provided by Carpentry contract DDD.

RFI 28

Question: 1. Who owns S1A slabs on S-112(except for area 13-14 & A-A.7)...? If site contractor...they would own exteriors stairs... but according to the concrete scope we would own foundation in these areas....? Would it not be simpler for Site Contractor to handle the foundations as well...? Not really understanding Scope of work item BB...

Answer: See revision to Summary of Work Item BB in the Concrete Work scope this addendum.

Question: 2. Cannot locate Loading dock area...are you referring to area where dumpster is on A-112...?

Answer: Delete reference to loading dock.

Question: 3. Scope of work item FF...can this be eliminated...that is the point of using stego wrap under the slabs...?

Answer: Provide as noted on drawings and specifications.

Question: 4. Scope of work item NN...?

Answer: See addendum 3 for structural sketches and drawings adding exterior stairs and walls. Delete reference to loading dock.

Question: 5. Scope of work item PP contradicts scope of work item BB....??

Answer: See revision to Item BB this addendum.

Question: 6. Scope of work item RR & VV....how do we bid this...? We have no way of knowing how Demo contractor will leave these areas... it would be better to have Demo contractor handle this themselves.

Answer: Review documents on locations of walls and floors that are to be demolished to price accordingly.

Question: 7. Scope of work item HH contradicts scope of work item U... please advise.

Answer: See revision to Summary of Work Item HH in the Concrete Work scope this addendum.

RFI 29

Question: 1. The metal wall panels section 074213.13 is the same specification as the Milton School project in which FABRAL was approved on the wall panels using the HCF 16-2C panel in 22 gauge. Is this acceptable on the R. Shields project? As the product that's spec'd is a soffit panel and not meant to be installed as detailed. Please advise.

Answer: See Project Manual – Modifications above in this Addendum.

RFI 30

Question: 1. After further review of the drawings, the Formed Metal Wall Panel spec does not match the panel profile detailed on the drawings. The specs call for a flush panel that has a 7" face. Keynote C on the elevation material legend call for a metal panel with a 6" rib as represented on details 1 & 3/A-514 yet detail 5/A-615 details an exposed fastener panel with alternating ribs. Can you please qualify the type of metal panel we are to provide?

Answer: Metal panel shown in drawings is representation only, see specification for metal panel. See Project Manual – Modifications above in this Addendum.

5. **SUBSTITUTION REQUESTS**

- 5.1. ISI Building Products – Viper Vapor Barrier (**Approved**)
- 5.2. Composite Material Wall Panels – AL13 Architectural Systems (**Not Approval**)
- 5.3. Fixed Audience Seating – Hussey Seating Company – Quattro (**Approved**)
- 5.4. Gymnasium Dividers – Performance Sports Systems (PSS) – Roll Up Divider Curtains (**Approved**)
- 5.5. Lighting Fixtures Package – Penn Lighting Associates (See Approved lights this addendum)

ATTACHMENT LIST

- 1. 007-Bid Form Shields Elementary Revised Addendum 4
- 2. Spec Section 08 63 00 Metal-Framed Skylights
- 3. Spec Section 27 51 17 Public Address System
- 4. Spec Section 27 53 13 Wireless Clock System
- 5. A-130
- 6. A-514
- 7. A-515
- 8. A-516
- 9. A-517
- 10. A-518
- 11. A-519
- 12. A-520
- 13. A-521
- 14. A-522
- 15. A-523
- 16. A-524
- 17. A-526
- 18. A-527
- 19. A-528
- 20. A-SK-AD120.01.01
- 21. A-SK-AD120.02.01
- 22. A-SK-A-102.01.01
- 23. A-SK-A-112-02-01
- 24. A-SK-A-123.01.01
- 25. A-SK-A-123.01.01
- 26. A-SK-A-203.02.01
- 27. A-SK-A-203.08.01
- 28. A-SK-A-613.W30
- 29. A-SK-A-613.W31
- 30. A-SK-A-613.W32
- 31. A-SK-A-613.W34
- 32. A-SK-A-613.W36
- 33. A-SK-A-614.W45
- 34. A-SK-A-615.13.01
- 35. S-SK.S102.01.01
- 36. S-SK.S112.01.01
- 37. S-SK.S122.01.02
- 38. S-SK.S506.04.01
- 39. S-SK.S517.06.01
- 40. M-SK-M114.01.01
- 41. M-SK-M124.01.01
- 42. P-SK-P130.01.01
- 43. P-SK-P401.01.01

- 44. E-SK-E111.01.01
- 45. E-SK-E112.01.01
- 46. E-SK-E113.01.01
- 47. E-SK-E211.01.01
- 48. E-SK-E212.01.01
- 49. E-SK-E213.01.01
- 50. E-SK-E700.01.02

END OF ADDENDUM No. 4

BID FORM

To: Cape Henlopen School District
Attn: Director of Administrative Services
Brian Bassett

Clearly Mark Contract you are bidding (Only 1 contract per bid form)

For Bid Package A:

___	Contract #1	Site Work	___	Contract #10	Drywall/Metal Stud
___	Contract #2	Demolition	___	Contract #11	Acoustical Work
___	Contract #3	Concrete Work	___	Contract #12	Floor Covering Work
___	Contract #4	Masonry Work	___	Contract #13	Caulking/Painting
___	Contract #5	Steel Work	___	Contract #14	Casework
___	Contract #6	Carpentry & General Work	___	Contract #15	Kitchen Equipment
___	Contract #7	Roofing Work	___	Contract #16	Mechanical
___	Contract #8	Furnish Hollow Metal/Doors/Hardware	___	Contract #17	Sprinkler System
___	Contract #9	Aluminum Storefront/Windows/ Glass and Glazing	___	Contract #18	Electrical

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: () _____ - _____ **Fax No.:** () _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

\$()

BID FORM

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An “ADD” or “DEDUCT” amount is indicated by the crossed out part that does not apply.

ALTERNATE No. 1: ADDITIONAL CLASSROOMS A124 AND A224 AT BUILDING ADDITION (Contracts A-1, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-16, A-17 & A-18)

1. BASE BID: Area C at the Addition’s North-west end provide First and Second Floor as shown on sheets A-113, A-123, A-130, A-160, A-163, A-170, and A-173. Provide all Civil, Landscaping, Structural, Mechanical, Electrical, Plumbing, Fire Protection, and Technology components as required to provide for First and Second Floor New Work shown on Area C Base Bid drawings.
2. ALTERNATE: Provide new First Grade Classrooms C124 (at First Floor) and Third Grade Classroom C224 (at Second Floor) as shown on sheets A-180 and A-181. Provide all required Civil, Landscaping, Structural, Mechanical, Electrical, Plumbing, Fire Protection, and Technology components as shown on Area C Alternate No. 1 drawings.

Add/Delete: _____
(\$)

ALTERNATE No. 2: LOWER LEVEL PROFESSIONAL DEVELOPMENT CENTER (Contracts A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-16, A-17 & A-18)

1. BASE BID: At Lower Level, provide Demolition and New Work shown on sheets AD001, AD002, AD100, A-100, A-101, A-102, A-150, A-151, and A-152 for Corridor A002, Corridor A002, Mechanical Room A003, Fire Pump Room A004, IDF 003, Corridor B005, Mechanical Office B006, Elevator, Stair D, Existing Stair E, and Stair F. Provide all Mechanical, Electrical, Plumbing, Fire Protection, and Technology components as required to provide for Lower Level, First Floor, and Second Floor New Work shown on Lower Level Area A and Area B Base Bid drawings.
2. ALTERNATE: At Lower Level, provide Demolition and New Work as required to create New Professional Development Center as shown on sheets A-182. Provide all required Mechanical, Electrical, Plumbing, Fire Protection, and Technology components as shown on Area B Alternate No. 2 drawings.

Add/Deduct: _____
(\$)

ALTERNATE No. 3: CLASSROOM VCT IN LIEU OF RUBBER FLOORING (Contract A-12)

1. BASE BID: Provide cost for Rubber Tile in Classrooms as shown on construction documents.
2. ALTERNATE: Provide cost for VCT in lieu of Rubber Tile in Classrooms, VCT colors need to match the rubber floor colors in specifications.

Add/Deduct: _____
(\$)

ALTERNATE No. 4: CAFETERIA AREA OUTDOOR CANOPY AT BUS ENTRANCE RAMP (Contracts A-3, A-4, A-5, A-6, A-7, A-9, A-13 & A-18)

1. BASE BID: Provide cost for Cafeteria Outdoor Canopy at Bus Entrance Ramp approximately between column lines “2” to “5.6” near column line “A”, including but not limited to the foundations, steel structure, roof deck and roofing materials, as shown on sheets A-110, A-112, A-120, A-122, A-130, A-160, A-162, A-200, A-201, A-202, and A-527. Provide all required Electrical, Plumbing, and Fire Protection as shown on Area B drawings.
2. ALTERNATE: Omit cost for Cafeteria Area Outdoor Canopy at Bus Entrance Ramp.

Add/Deduct: _____
(\$)

BID FORM

ALTERNATES (CON'T)

ALTERNATE No. 5: LIGHTNING PROTECTION (Contract A-18)

1. BASE BID: Provide no cost for Lightning Protection.
2. ALTERNATE: Provide cost for Lightning Protection per Section 26 06 01 Lightning Protection Systems.

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 6: COVER BOARD UNDER EPDM (Contract A-7)

1. BASE BID: Provide no Cover Board under EPDM Roofing.
2. ALTERNATE: Provide cost for Cover Board under EDPM roofing systems. See drawing A-130
NEW WORK – ROOF PLAN.

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 7: BUILDING FIRE ALARM (Contract A-18)

1. BASE BID: Provide no building fire alarm system.
2. ALTERNATE: Provide complete addressable fire alarm system, including control panels, annunciator panels, voice evacuation, and all peripheral devices such as detectors, pull stations, including devices, etc. as required for a complete and operating system as per the drawings and specifications. Provide Honeywell ProWatch integration. Include Honeywell PWNTHSDK and professional services and licensing to program and integrate the security system monitoring with the new fire alarm system. Co-ordinate monitoring points with the Owner.

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 8: ADDITIONAL LANDSCAPING (Contract A-1)

1. BASE BID: Provide the concrete sidewalk pattern and material changes as shown on L-101. Provide no cost for New Work on Landscape Plan.
2. ALTERNATE: Provide cost for Landscape as shown on construction drawings L-101 and L-102.

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 9: ROOF DECK PATIO/GARDEN CLASSROOM (Contracts A-A-3, A-5 & A-7)

1. BASE BID: Provide structural steel, concrete roof slab/deck, and roofing materials as shown on sheets A-120, A-122, and A-130. Provide all required Structural, Electrical, and Plumbing components as shown on Area C Base Bid drawings.
2. ALTERNATE: Roof Deck Patio/Garden Classroom shall be in Area B located off second floor Corridor B200 at plan East-West approximately between column lines "I" and midway between column lines "J and K", plan North-South between column line "5" to "9" as shown on sheet A-183. Provide all required Structural, Electrical, and Plumbing components as shown on Area C Alternate No. 9 drawings. Provide cost for roof paver system as indicated in specification section 07 60 00 ROOF PAVER SYSTEM and roof guardrail system as indicated in specification section 05 52 00 ALUMINUM RAILINGS.

Add: _____
(\$ _____)

BID FORM

ALTERNATES (CON'T)

ALTERNATE No. 10: LOBBY C101 GUARDRAIL AND HANDRAIL SYSTEM (Contracts A-5 & A-13)

1. BASE BID: Provide overlapping resin panel and steel post guardrail and handrail system at Lobby Stair and Bridge as shown on sheets A-413, A-701, and A-710. Provide one (1) field color / texture resin panel and three (3) accent resin panel color / textures, see Specification section 09 00 00 Finish Schedule.
2. ALTERNATE: Omit overlapping resin panel and steel post guardrail and handrail system at Lobby Stair and Bridge. Provide painted metal guardrail and handrail system at Lobby Stair and Bridge as shown on sheet A-709.

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 11: CLOCK SYSTEM (Contract A-18)

1. BASE BID: Provide the clock system as specified per specification 275000 Intercom and Clocks and on bid documents.
2. ALTERNATE: In lieu of 275000 Intercom and Clocks system in base bid, provide cost difference for a specification 27 51 17 Public Address Systems and specification 27 53 13 Wireless Clock System, see addendum #04 for these specification, similar to: Valcom ClassConnect utilizing Sapling Wireless Clocks supporting Notifier Unified Network Protocol. The price should include the deletion of the backboxes for the Base work.

Add/Deduct: _____
(\$ _____)

ALLOWANCES

Contract No. 1 Site Work

1 – Include the unit cost of liquid asphalt cement of **\$475.00 per ton** as noted in the Delaware Posted Asphalt price for January of 2020 per Del DOT Program. At the time of production lay down of product, cost will be adjusted per current cost of Delaware Posted Asphalt price. Contractor to provide the amount of tons of liquid asphalt cement to perform the complete project based on the project documents. See attachment: Delaware Posted Asphalt Price Sheet.

_____ total tons of liquid asphalt cement to be provided by Contract No.1 Site Work to complete the project scope.

Contract No. 3 Concrete Work

2 – Include the lump sum of the following amount **\$25,000** in the contract for cold weather protection of concrete work. See Section 012100 Allowances.

Contract No. 4 Masonry Work

3 – Include the lump sum of the following amount **\$25,000** in the contract for cold weather protection of masonry work. See Section 012100 Allowances.

Contract No. 6 Carpentry & General Work

4 – Include the lump sum of the following amount **\$10,000** in the contract for temporary enclosures as described in Section 015000 Temporary Construction Utilities, Facilities & Control Item 3.14 Enclosures. See Section 012100 Allowances.

Contract No. 16 Mechanical

5 – Include the lump sum of the following amount **\$100,000** in the contract for the temp heat fuel cost. Cost of work to be determined by fuel company receipts with the amount of fuel and cost per gallon. All equipment and labor for temp heat is part of the contract. This allowance is for fuel cost only. See Section 012100 Allowances.

Contract No. 10 Drywall/Metal Stud

6 – Include the lump sum of the following amount **\$25,000** in your contract for patching plaster walls and ceilings. Cost of work to be determined on a time and material basis. See Section 012100 Allowances.

BID FORM

UNIT PRICES

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

ADD

- UNIT PRICE No. 1.01: **Satisfactory fill in Place:** Indicate cost to provide satisfactory fill in place, furnished, placed and compacted. Unit of Measurement: **cubic yards**
- Contract A-1.** \$ _____
- UNIT PRICE No. 1.02: **Stone in place:** Indicate cost to provide **stone in place and compacted**. Unit of Measurement: **cubic yards**
- Contract A-1.** \$ _____
- UNIT PRICE No. 1.03: **Geo-Fabric in place:** Indicate cost to provide Geo-Fabric in place. Unit of Measurement: **Square yards**
- Contract A-1.** \$ _____
- UNIT PRICE No. 1.04: **Undercut & disposal (mass):** Indicate cost for mass excavation & disposal. Unit of Measurement: **Cubic yards**
- Contract A-1/A-16.** \$ _____
- UNIT PRICE No. 1.05: **Undercut and disposal (trench) per cubic yard. Undercut & disposal (trench):** Indicate cost for trench excavation & disposal. Unit of Measurement: **Cubic yards.**
- Contract A-1/A-16/A-18.** \$ _____
- UNIT PRICE No. 1.06: **Select (trench) Backfill:** Indicate cost to provide satisfactory trench fill furnished, placed and compacted Unit of Measurement: **cubic yards.**
- Contract A-1/A-16/A-18.** \$ _____
- UNIT PRICE No. 1.07: **Top soil:** Indicate cost to provide top soil in place and compacted. Unit of Measurement: **cubic yards.**
- Contract A-1.** \$ _____
- UNIT PRICE No. 1.08: **Removal of unsuitable soil and replacement of suitable soil,** Indicate cost to remove, disposed of unsuitable unclassified materials, and to provide, place and compact suitable soil. Unit of Measurement: **cubic yards.**
- Contract A-1.** \$ _____
- UNIT PRICE No. 1.09: **Removal of PCB contaminated ballasts.** Indicate additional cost for removal and proper disposal of ballasts which are not labeled as PCB free.
- Contract A-2.** \$ _____

BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for 90 days from the date of opening of bids, and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid (if required).

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ **By:** _____
(SEAL) (Authorized Signature)

(Title)
Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Security
(Others as Required by Project Manuals)

R. Shields Elementary School
820 Savannah Road Lewes, Delaware 19958
Project No. 200-81485-16005

BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category

Subcontractor

Address (City & State)

**Subcontractors tax payer ID #
or Delaware Business license #**

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date (*to the Cape Henlopen School District*).

All the terms and conditions of (*Project or Contract Number*) have been thoroughly examined and are understood.

NAME OF BIDDER: _____

**AUTHORIZED REPRESENTATIVE
(TYPED):** _____

**AUTHORIZED REPRESENTATIVE
(SIGNATURE):** _____

TITLE: _____

ADDRESS OF BIDDER: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

R. Shields Elementary School
820 Savannah Road Lewes, Delaware 19958
Project No. 200-81485-16005

BID FORM

AFFIDAVIT OF EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation.

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Authorized representative (typed or printed): _____

Authorized representative (signature): _____

TITLE: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

SECTION 08 63 00

METAL-FRAMED SKYLIGHTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Design, fabrication and erection of the entire modular skylight system.
- 2. Finish on metal and pultruded composite components.
- 3. Related flashing.
- 4. Integral modular skylight glass and glazing.

B. Related Sections

- 1. 07 72 00 Roof Accessories, for prefabricated curbs.

1.3 REFERENCES

A. American Architectural Manufacturers Association, Window & Door Manufacturers Association, and Canadian Standards Association (AAMA/WDMA/CSA)

- 1. 101/I.S.2/A440-11 (NAFS-11): North American Fenestration Standard/Specification for Windows, Doors, and Skylights.

B. American Society for Testing and Materials (ASTM)

- 1. D 1929: Standard Test Method for Determining Ignition Temperature of Plastics.
- 2. D 2843: Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics.
- 3. D 635: Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position.
- 4. E 90: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements. Sound transmission loss as identified in Terminology C634 and calculated by:
 - a. ASTM E 413: Classification for Rating Sound Insulation.
 - b. ASTM E 1332: Standard Classification for Rating Outdoor-Indoor Sound Attenuation.

5. E 108: Standard Test Methods for Fire Tests of Roof Coverings.
6. E 283: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
7. E 330: Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
8. E 331: Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
9. E 783: Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors.
10. E 1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
11. E 1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

C. International Organization for Standardization (ISO)

1. ISO 2081: Metallic and other inorganic coatings — Electroplated coatings of zinc with supplementary treatments on iron or steel.

D. Insulating Glass Certification Council (IGCC)

1. Classification of Insulating Glass Units.

E. National Fenestration Rating Council (NFRC)

1. 100-2010: Procedure for Determining Fenestration Product U-factors.
2. 200-2010: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
3. 500-2010: Procedure for Determining Fenestration Product Condensation Resistance Values.

F. Occupational Safety and Health Administration (OSHA)

1. 29CFR 1910.28(b)(3)(i): Duty to have fall protection and falling object protection.

1.4 SYSTEM DESCRIPTION

A. Design Requirements

1. Skylight shall consist of prefabricated, pre-glazed engineered modular fixed units including pultruded composite framing, insulated glass units, aluminum retention caps, fasteners, gaskets, sealants, and other components as required for a complete and weathertight installation, factory assembled.
2. Each skylight framing and glazing module, pressure bar, and flashing shall employ connections that allow its removal and replacement without destruction or loss of integrity to the other components of the modular skylight system.
3. Frame and sash shall be of insulated composite material consisting of 80% continuous fiberglass and 20% two-component polyurethane resin with pre-finished interior surface.

4. Weather stripping system shall be made of engineered prefabricated polymer profiles, designed specifically for skylights. Stripping shall be replaceable without destruction or loss of integrity of the modules. Glazing sealant material shall accommodate movement and extreme temperature conditions.

B. Performance Requirements

1. Compliance with AAMA/WDMA/CSA 101/I.S.2/A440, as indicated in "Unit Skylight Standard" Paragraph below, is required by the International Building Code.
 - a. Skylight Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1) Performance Class and Grade: Class CW-PG 30.
2. Structural framing of sufficient sizes to support design loads as prescribed by governing building codes.
3. Structural Performance by Uniform Static Air Pressure Difference
 - a. Maximum uplift
 - 1) ASTM E 330: 100 psf.
 - 2) NAFS-11: 65 psf.
 - b. Maximum download
 - 1) ASTM E 330: 125 psf.
 - 2) NAFS-11: 60 psf
4. Air Infiltration (ASTM E 283): Limited to 0.01 CFM/square foot. at 1.57 psf static pressure.
5. Water penetration (ASTM E 331): No water penetration when tested up to 15 psf.
6. Ignition Temperature for pultruded composite frame (ASTM D 1929)
 - a. Self Ignition: 500 degrees Celsius.
 - b. Flash Ignition: 410 degrees Celsius.
7. Smoke Density Rating (ASTM D 2843): Average 7.0.
8. Rate of Burning in a Horizontal Position (ASTM D 635): Class CC1.
9. Fire Tests of Roof Coverings (ASTM E 108): Class B.
10. Acoustic performance (ASTM E 90)
 - a. Calculated by ASTM E 413: STC 37 interior noise.
 - b. Calculated by ASTM E 1332: QITC 28 exterior noise.
11. U-factor (NFRC 100): Max. 0.35 Btu/sq. ft. x h x deg F.
12. SHGC (NFRC 200): Maximum 0.40.
13. Windborne-Debris Impact Resistance (ASTM E 1886): Passes missile-impact and cyclic-pressure tests in accordance with ASTM E 1996 for Wind Zone 1 for basic protection.

- a. Large-Missile Test: For glazing located within 30 feet of grade.
- b. Small-Missile Test: For glazing located between 30 feet (9.1 m) and 60 feet above grade.

C. Installation Requirements

1. During installation, the modular skylight system shall not require:

- a. Any cutting, drilling, welding or soldering.
- b. Any application of field sealants.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of skylight. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for skylights.
- B. Shop Drawings: For skylight work. Include plans, elevations, sections, details, and connections to supporting structure and other adjoining work.
- C. Aluminum Finish Samples: For each type of exposed finish required, in a representative section of each skylight in manufacturer's standard size.
- D. Pultruded samples: Submit samples of pultruded pre-finished frame.
- E. Glazing Samples: For each color and finish of glazing indicated, 12 inches square and of same thickness indicated for the final Work.
- F. Product Schedule: For skylights. Use same designations indicated on Drawings.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Manufacturer and Installer.
- B. Product Test Reports
 - 1. For each type and size of skylight, for tests performed within the last four years by a qualified testing agency.
 - 2. Test results based on testing of smaller skylights than specified will not be accepted.
- C. Field quality-control reports.
- D. Sample Warranty: For special warranty.

1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Cleaning and maintenance manual.
- B. As-Built Drawings: One set.

1.9 QUALITY ASSURANCE

- A. Manufacturer: The modular skylight and all optional accessories shall be the product of a single Manufacturer.
 - 1. Manufacturer Qualifications: Capable of fabricating skylights that meet or exceed performance requirements indicated and of documenting this performance by inclusion in lists and by labels, test reports, and calculations.
 - 2. Performance Record: Regularly engaged in custom modular skylight construction and able to show proof of similar projects completed over the past ten years.
 - 3. Responsibilities: The Manufacturer of the skylight shall be responsible for the complete design, fabrication, and finishing of the modular skylight assembly, and shall take final responsibility for its proper installation by the Installer.
- B. Installer Qualifications
 - 1. Regularly engaged in custom modular skylight installation and able to show proof of similar projects completed over the past ten years.
 - 2. Utilizing only those mechanics who have been trained by the Manufacturer to install its modular skylight products.

1.10 WARRANTY

- A. Special Warranty: The system and its components shall be warranted for the following periods from the date of modular skylight completion.
 - 1. System: Ten years against leakage, defective design and defective materials.
 - 2. Glass: Per the Manufacturer's standard warranties against delamination, seal failure, and coating failure.
 - a. Glass breakage is not warranted.
 - 3. Painted aluminum finish: Ten years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design:
 - 1. Manufacturer: Velux-America Inc., 104 Ben Casey Drive, Fort Mill, SC 29708.

- a. Website: www.modularskylights.velux.com.
2. System: Velux VMS Custom Modular Skylight.
- B. Other Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work may include but are not limited to the following:
 1. American Skylites Inc.
 2. C/S Groups.
 3. CPI International.
 4. Kingspan Light + Air, North America.
 5. Plasteco, Inc.
 6. Sunglo Skylight Products.

2.2 MATERIALS

- A. Frame and sash in pultruded composite material consisting of 20% fiberglass and 80% two-part polyurethane resin with water-based two-component clear coating and white base RAL color 9010, gloss 30.
- B. Extruded aluminum retention caps.
- C. Flashing
 1. Custom prefabricated aluminum sheet.
 - a. Minimum thickness of 1mm.
 - b. Of alloy and temper required for compatibility with the specified finish.
 2. Visible surface: Polyamide polyester lacquer in NCS standard color S 7500-N.
 3. 50mm EPS insulation bonded to the back of the flashing.
 4. Pre-fitted wind and snow stop bonded to back of flashing base.
- D. Brackets and hinges
 1. Galvanized low-carbon steel for cold forming, galvanized structural steel, high-strength low-alloy steel, galvanized free-cutting steel and sealed passivated cast zinc.
 - a. Electroplated with zinc per ISO 2081, iridescent finish.
 2. Pre-installed to skylight modules.
- E. Sealant
 1. All required sealants factory pre-applied to the modular skylight system.
 2. No additional sealants shall be required during installation.
- F. Finish

1. Extruded aluminum cladding 1.5mm thick, scratch resistant powder lacquer (60-120 my). Color is “noir 2100 sable YW” Akzo Nobel with Kynar 500
2. Pultruded interior frame and sash finish is a water based two component clear coating in white base RAL color 9010, gloss 30

G. Insulated Glazing Units

1. 8mm toughened outer pane.
2. 3 mm + 3 mm safety inner pane laminated with 2 layers of 0.38mm interlayer PVB foil.
3. Gas fill: Argon.
4. Warm edge spacer.

2.3 FABRICATION

- A. Modular skylight components shall be manufactured, fitted and assembled in the manufacturer’s facilities.
- B. Modular components shall be marked and packed to indicate properly sequence of module installation.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Coordinate installation of skylight with installation of substrates, vapor retarders, roof insulation, roofing membrane, and flashing as required to ensure that each element of the Work performs properly and that combined elements are waterproof and weathertight.
- B. Install skylights level, plumb, and true to line, without distortion.
- C. Anchor skylights securely to supporting structures.
- D. Where aluminum surfaces of skylights will contact another metal or a corrosive substrate, such as preservative-treated wood, apply bituminous coating on concealed metal surfaces or provide other approved permanent separation recommended in writing by Manufacturer.

3.3 TOLERANCES

- A. All parts of the work, when completed, shall be within the following tolerances.

1. Maximum variation from plane or location shown on approved shop drawings
 - a. 1/8" per foot.
 - b. 1/2" in total length.
2. Maximum offset from true alignment between two members abutting end to end, edge to edge, in line, or separated by less than three inches: 1/32".

3.4 CLEANING

- A. Clean exposed skylight surfaces according to Manufacturer's written instructions. Touch up damaged metal coatings and finishes.
- B. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Remove and replace glazing that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect skylight surfaces from contact with contaminating substances resulting from construction operations.

END OF SECTION

SECTION 27 51 17
PUBLIC ADDRESS SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Amplifier and control equipment.
- B. Input equipment.
- C. Sound system cable.

1.02 REFERENCE STANDARDS

- A. NFPA 70 - National Electrical Code.

1.03 SYSTEM DESCRIPTION

- A. Public address system for voice and music.
- B. Input components:
 - 1. Compact disc player.
 - 2. AM/FM tuner.
 - 3. Microphone.
- C. Features:
 - 1. Interface to telephone system.
 - 2. One-way paging by zone.
 - 3. Distribution of background music.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate electrical characteristics and connection requirements. Indicate layout of equipment mounted in racks and cabinets, component interconnecting wiring, and wiring diagrams of field wiring to speakers and remote input devices.
- C. Product Data: Provide data showing electrical characteristics and connection requirements for each component.
- D. Test Reports: Indicate satisfactory completion of each test recommended by the manufacturer.
- E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of product.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Manufacturer's Field Reports: Indicate that installation is complete and system performs according to specified requirements.
- H. Project Record Documents: Record actual locations of speakers, control equipment, and outlets for input/output connectors.
- I. Operation Data: Include instructions for adjusting, operating, and extending the system.
- J. Maintenance Data: Include repair procedures and spare parts documentation.

1.05 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70 and Federal Communications Commission.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience with service facilities within 100 miles of Project.

- C. Supplier Qualifications: Authorized distributor of specified manufacturer with minimum three years documented experience.
- D. Installer Qualifications: Authorized installer of specified manufacturer with service facilities within 50 miles of Project.
- E. Products: Listed, classified, and labeled as suitable for the purpose intended.
- F. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Bogen Communications, Inc: www.bogen.com.
- B. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 AMPLIFICATION AND CONTROL EQUIPMENT

- A. The amplifier shall be a model GS250D, rated at 250 watts RMS with manufacturer provided rack mounting hardware.
- B. The amplifier shall accommodate up to 6 Lo-Z balanced microphones, 2 Hi-Z auxiliary sources and a telephone paging input (MIC 5 shall be switch-selected for MIC or telephone line; MIC 6 switch-selected for MIC or AUX 1). MIC 1 through 4 shall use XLR-type connectors; AUX inputs shall be via RCA phono jacks and all other connectors shall use pluggable screw terminals. Phantom power shall be supplied for use with condenser microphones. Microphone precedence connections shall be included for MIC 1, 2, 3, 5/TEL, 6/AUX 1 and AUX 2.
- C. The amplifier shall provide a frequency response from 65 Hz to 20 kHz +0/-2 dB at rated power. Distortion shall be 0.3% typically.
- D. The amplifier shall include an Audio Enhancement circuit, variable loudness contour control, and dual function equalizer. The equalizer shall be switch selectable for feedback control or acoustic shaping and shall include 10 center-detent slide controls providing ± 12 dB of boost or cut from 62.5 Hz to 16 kHz in acoustic mode and from 125Hz to 8 kHz in feedback control mode.
- E. The amplifier shall include automatic level control to provide consistent output regardless of who is paging, automatic muting complete with a VOX circuit, and a variable mute level. Provisions shall also be included for remote volume control, using an accessory control unit (GSRVC).
- F. Outputs shall be provided for 4- and 8-ohm speakers and for 25V, 25VCT and 70V distributed systems. Additional outputs shall be provided to feed a booster amp and recorder. A dedicated output shall permit feeding a 600-ohm telephone line using an accessory transformer (Model WMT1A). A Pre-Amp Out/Power-Amp In circuit shall be provided to insert signal processing equipment.
- G. The amplifier shall be rack mountable using an accessory rack panel kit (GSDRPK). It shall carry the necessary safety agency listings for both the US and Canada.

2.03 COMPONENTS

- A. CD Player and AM/FM Receiver:
 - 1. The auxiliary program source shall be a Bogen Model CDR1 CD Player with AM/FM Receiver, or equivalent.
 - 2. The program source shall include manual tuning and auto seek control. The auto seek control shall automatically ascend (or descend) the frequency scale to the next strong frequency. It shall be possible to program up to 5 bands (FM1, FM2, FM3, AM1, AM2) with up to 6 stations each for a total of 30 stations. A preset scan control shall be provided to scroll and select from available presets. The FM section shall have a frequency range from

87.5 MHz - 108 MHz, the AM section will have a frequency range of 530 kHz - 1710 kHz. Pluggable screw terminal inputs shall be available for an AM loop antenna, a FM dipole antenna, and for speaker outputs. An F-type coax antenna connector shall also be available.

3. The CD player system shall include Browse, Repeat, Random Play, and Pause functions. The CD player shall be capable of playing CD, CD-R, or CD-RW discs (including MP3 files).
 4. The CDR1 shall have a frequency response of 20 Hz - 20 kHz (< 5 dB).
 5. The following controls shall be provided: Power/ Volume, Disc Eject, Mode (Radio, CD, AUX), Audio/Menu Select (Volume, Bass, Treble, Balance, Display, Seek, and Clock), Mute, Scan, Stereo/Mono, Station Store/Select, Loudness Contour, Band, and Station Select. An LCD digital readout shall be provided to show selected frequency and band (in Radio Mode) or track (in CD Mode) information.
 6. The unit shall operate on 12V DC (3A) power with an included desktop-style AC power adapter. It shall be possible to drive 8-ohm loudspeakers directly from 1W per channel (Right/Left) outputs. A 50-ohm mono-summed RCA output shall also be available, in addition to stereo.
 7. The unit shall be 7-1/4" W x 2-1/8" H x 9-1/4" D and shall weigh 4 lb. The unit shall mount in a standard 19-inch rack system (2 rack spaces high) with the RK78 rack mounting kit.
- B. Microphone: Desk type low impedance microphone with push-to-talk switch.
1. Product: Bogen DDU250 or approved equal.
 2. Microphone Preamplifier: Provide RDL EZ-MPA1 or approved equal to connect microphone to and boost signal for it to the PA amplifier.
 3. Substitutions: See Section 01 60 00 - Product Requirements.
- C. Speakers w/volume control
1. Product: Refer to Drawings.
 2. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Speaker Baffles and Enclosure: Square, painted steel, with uniform perforations, and volume control
1. Product: Refer to Drawings.
 2. Substitutions: See Section 01 60 00 - Product Requirements.
- E. Horns: Wide dispersion indoor/outdoor horn with driver.
1. Product: Refer to Drawings.
 2. Substitutions: See Section 01 60 00 - Product Requirements.
- F. Telephone Interface: 600 ohm - auxiliary input.
1. Product: Refer to Drawings.
 2. Substitutions: See Section 01 60 00 - Product Requirements.

2.04 WIRE AND CABLE

- A. Microphone Cord: 20 AWG stranded copper conductor, 600 volt insulation, rated 60 degrees C, two conductor shielded cable with rubber jacket. Cable shall be plenum rated.
- B. Input Cable: 22 AWG copper conductor, 300 volt insulation, rated 60 degrees C, paired conductors twisted together, shielded, and covered with a PVC jacket. Cable shall be plenum rated.
- C. Plenum Cable for Speaker Circuits: 22 AWG copper conductor, 300 volt insulation, rated 200 degrees C, paired conductors twisted together shielded and covered with a nonmetallic jacket; suitable for use for Class 2 circuits in air handling ducts, hollow spaces used as ducts, and plenums.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Splice cable only in accessible junction boxes or at terminal block units.
- C. Make cable shields continuous at splices and connect speaker circuit shield to equipment ground only at amplifier.
- D. Install input circuits in separate cables and raceways from output circuits.
- E. Leave 18 inches excess cable at each termination at microphone, volume pad, speaker, and other system outlet.
- F. Leave 6 feet excess cable at each termination at system cabinet
- G. Provide protection for exposed cables where subject to damage.
- H. Use armored cable for outside speaker circuits.
- I. Support cables above accessible ceilings to keep them from resting on ceiling tiles. Use spring metal clips or plastic cable ties to support cables from structure for ceiling suspension system. Include bridle rings or drive rings.
- J. Use suitable cable fittings and connectors.
- K. Connect reproducers to amplifier with matching transformers.
- L. Ground and bond equipment and circuits in accordance with Section 26 05 26.
- M. Provide all required appropriate cabling to connect microphone preamplifier to amplifier. Cabling shall be plenum rated and run concealed in walls, above ceilings, and in conduit (if exposed).

3.02 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Provide the services of manufacturer's technical representative to prepare and start system.
 - 1. Include making of final wiring connections, inspection and adjusting of completed installation, and systems demonstration.
 - 2. Certify that installation is complete and performs according to specified requirements.
- C. Measure and record sound power levels at designated locations.

3.03 ADJUSTING

- A. Adjust transformer taps and volume controls for appropriate sound level.
- B. Adjust devices and wall plates to be flush and level.

3.04 CLOSEOUT ACTIVITIES

- A. See Section 01 79 00 - Demonstration and Training, for additional requirements.
- B. Demonstration: Demonstrate operation of system to Owner's personnel.
 - 1. Use operation and maintenance data as reference during demonstration.
 - 2. Conduct walking tour of project.
 - 3. Briefly describe function, operation, and maintenance of each component.
- C. Training: Train Owner's personnel on operation and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of two hours of training.
 - 3. Instructor: Manufacturer's training personnel.
 - 4. Location: At project site.

- D. Owner Requested Volume Adjustements: Provide 16 hours of contractor personnel time to adjust speaker volume as directed by Owner.

3.05 MAINTENANCE

- A. See Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. Provide service and maintenance of public address and music system for one year from Date of Substantial Completion.

END OF SECTION

SECTION 27 53 13
WIRELESS CLOCK SYSTEM

GENERAL

1.01 SUMMARY OF WORK

- A. This Section specifies materials and accessories for a wireless clock system.
- B. Section Includes:
 - 1. Master clock;
 - 2. Elapsed timer control panel;
 - 3. Repeaters;
 - 4. Secondary analog clock.

1.02 REFERENCE STANDARDS

- A. Federal Communications Division (FCC)

PART 15 - CODE OF FEDERAL REGULATIONS.

2.01 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

- A. NFPA 70E-[2012], Standard for Electrical safety in the Workplace.
- B. US Green Building Council (USGBC).
 - 1. LEED® NC Version 2.2-[2009], LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package for New Construction and Major Renovations.
- C. Underwriter's Laboratories (UL).
 - 1. UL

2.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this Section with communications and electronics work and with work of other trades for proper time and sequence to avoid construction delays.

2.03 ACTION AND INFORMATIONAL SUBMITTALS

- A. Make submittals in accordance with Contract Conditions and Section 01 30 00 - Submittal Procedures.
- B. Product Data: Submit product data including manufacturer's literature for clock system materials and accessories, indicating compliance with specified requirements and material characteristics.
 - 1. Submit list on clock system manufacturer's letterhead of materials and accessories to be incorporated into Work.
 - 2. Include product name.
 - 3. Include preparation instructions and recommendations, installation methods, and storage and handling requirements.
 - 4. Include contact information for manufacturer and their representative for this Project.
- C. Shop Drawings: Submit shop drawings with information as follows:
 - 1. Diagram of proposed system showing system platform appliance, communication pathway, and schedule of individual device locations.
 - 2. Indicate integration with the Owner's network and servers. Include line diagram of network relationships.
 - 3. Show system power requirements.
- D. Samples:
 - 1. Submit one sample of each type of device used on project. Samples will be returned Contractor for incorporation into the Work after Consultant's review.

- E. Test Reports:
 - 1. Submit evaluation and test reports or other independent testing agency reports showing compliance with specified performance characteristics and physical properties.
- F. Subcontractor Experience: Submit verification of communication and electronics subcontractor's experience.
- G. Manufacturer's Authorization: Submit verification of communication and electronics subcontractor's authorization from clock system manufacturer to perform Work of this section.

2.04 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Supply maintenance data for clock system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- B. Record Documentation: In accordance with Section 01 78 00 - Closeout Submittals.
 - 1. List materials used in clock system work.
 - 2. Warranty: Submit warranty documents specified.

2.05 QUALITY ASSURANCE

- A. Communications and Electronics Subcontractor Quality Assurance:
 - 1. Work experience of 3 years minimum with work similar to work of this Section.
 - 2. Manufacturer's authorization to perform work of this section.
- B. Supplier's Accreditation: Use only suppliers accredited by clock system manufacturer.
- C. Supplier's Maintenance Requirements:
 - 1. Ensure local supplier has adequate facility for storage of spare parts for clock system.

2.06 DELIVERY STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver material in accordance with Section 01 60 00 - Common Product Requirements.
 - 2. Deliver materials and accessories in clock system manufacture's original packaging with identification labels intact and to suit project.
 - 3. Ensure clock system materials are not exposed to moisture during delivery.
 - 4. Replace damaged clock system materials.
- B. Storage and Handling Requirements: Store materials off ground in dry location and protected from exposure to fumes and harmful weather conditions and at temperature conditions recommended by manufacturer.
 - 1. Store in original packaging until installed.
- C. Packaging Waste Management:
 - 1. Separate and recycle waste packaging materials in accordance with Section 01 74 19 - Construction Waste Management and Disposal.
 - 2. Remove waste packaging materials from site and dispose of packaging materials at appropriate recycling facilities.
 - 3. Collect and separate for disposal, paper and plastic material in appropriate on-site storage containers for recycling in accordance with Waste Management Plan.

2.07 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
- B. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions. Whether or not covered under manufacturer's standard warranty, coverage shall include parts and labor.
- C. Warranty period: 2 years commencing on Date of Project Substantial Completion.

2.08 PRODUCTS

2.09 MANUFACTURER

- A. Basis of design will be Sapling Inc., 1633 Republic Rd Huntingdon Valley, PA 19006, Phone: 1-215-322-6063, URL: www.sapling-inc.com. Bogen is an approved manufacturer as well.
- B. Substitutions will be considered only if submitted at least 10 days prior to bid for consideration and possible approval.

2.10 SYSTEM REQUIREMENTS

- A. Ensure clock system components are designed to operate as a wireless clock system and as part of complete system including "fail-proof" design to ensure power interruption does not cause system failure.
- B. Ensure system synchronizes all clocks and devices to each other.
- C. Ensure system does not require FCC licensing.
- D. Ensure system uses frequency-hopping technology.
- E. Ensure system is capable of correcting clocks immediately upon receipt of wireless signal.
 - 1. Analog and digital clocks automatically correct themselves on receipt of wireless signal.
 - 2. Include built-in closed-loop system in analog clocks capable of allowing clocks to detect position of hands and bring clocks to correct time even if clocks are manually altered.
 - 3. Ensure analog clocks have diagnostic function capable of allowing user to view how long since clock received wireless signal.
 - 4. Ensure analog clocks are capable of functional tests of electronics and gears.
- F. Ensure each individual product is bench tested at manufacturer's facility.
 - 1. Random testing is unacceptable.
- G. Ensure each product is designed, assembled and tested in the United States of America.
- H. Basis of Design: Sapling Inc., Wireless Clock System.

2.11 MASTER CLOCK

- A. Master Clock Type 1: To UL and cUL 863.
 - 1. Ensure master clock includes 10 pre-programmed (S)NTP backup addresses.
 - 2. Ensure master clock is capable of receiving (S)NTP time signal via Ethernet.
 - 3. Ensure master clock is capable of receiving digital signals through RS485 connection.
- B. Ensure master clock is capable of correcting secondary clocks for Daylight Saving Time
 - 1. Ensure master clock is capable of customizing Daylight Saving Time, in the event of international use or a change in government regulations.
- C. Ensure master clock is capable of outputting RS485 signals.
 - 1. Ensure master clock has two clock circuits capable of outputting signals including:
- D. 59 minute correction;
- E. 58 minute correction;
- F. National Time or Rauland correction;
- G. Once a day pulse;
- H. Rauland digital correction.
 - 1. Communications Interface: Ensure master clock system is capable of being programmed remotely through online interface accessible through LAN and compatible with Microsoft Internet Explorer and Mozilla Firefox web browsers.
- I. Ensure interface includes functions as follows:
- J. Allow users to schedule bells and other events;

- K. Display features;
- L. Show IP settings;
- M. Show other master clock settings;
- N. Set time and date;
- O. Download or upload master clock settings;
- P. Configure e-mail alerts for various instances.
 - 1. Display: Two row, 20 character LED and backlit LED display and 2 x 8 inch rubber keypad for operator programming.
 - 2. Optional relays: Include 4 relays to ensure master clock is capable of utilizing 4 zones that can be used for scheduling facility systems as follows:
 - a. Bells if needed
 - 3. Lights if needed
- Q. Allow for programming of master clock through 16 button rubber tactile keypad or built-in web interface.
- R. Ensure master clock can contain up to 800 events.
- S. Ensure master clock can contain up to 255 schedule changes.
- T. Clock System: Wireless with transmitter to FCC, Part 15.
 - 1. Transmitter: Capable of transmitting data to SAL wireless analog and SBL wireless digital clocks, and receiving signal from (S)NTP time server
 - 2. Automatic bi-annual Daylight Savings Time changes.
- U. Countdown for Digital Clocks: Ensure master clock is capable of having digital clocks counting down time between events.
- V. Power Requirements: 110 V AC, 60Hz
 - 1. Ensure master clock is capable of 10 years battery power backup in event of power failure.
- W. Basis of design: Sapling Inc., SMA 3000 Series Master Clock.

2.12 REPEATERS

- A. Wireless Repeater: Capable of wirelessly transmitting and receiving data and compliant with FCC, Part 15.
 - 1. Input voltage: 85 - 230 V AC;
 - 2. Input: RS485. Sapling Wireless Communications;
 - 3. Input source: Master clock or Secondary Sapling Wireless Clock;
 - 4. RF power output: 30 dBm (1 Watt);
 - 5. Operation frequency range: 915-928 MHz frequency hopping technology;
 - 6. Mounting: Wall mount;
 - 7. Housing: 11 x 8 x 17 inches black smooth surface metal enclosure.
 - 8. Basis for design: Sapling Inc., Wireless Repeater.
- B. Network Repeater: Capable of receiving time signal through TCP/IP from master clock and compliant with FCC, Part 15.
 - 1. Input voltage: 85 - 230 V AC;
 - 2. Input: RJ45;
 - 3. Input source: Master clock;
 - 4. RF power output: 30 dBm (1 Watt);
 - 5. Frequency range: 915-928 MHz frequency hopping technology;
 - 6. Mounting: Wall mount;
 - 7. Housing: 11 x 8 x 17 inches black smooth surface metal enclosure with 7 inch antennae.
 - 8. Basis for design: Sapling Inc., Network Repeater.

2.13 SECONDARY CLOCKS

- A. Analog Clocks: To UL and cUL 863, designed for wireless system with fully automatic plug and play capability.
 - 1. Ensure secondary clock is capable of receiving wireless signals from master clock.
 - 2. Ensure each secondary clock works as an RF signal repeater, establishing a Mesh Network.
 - 3. Clock display: 12 hour white face with black numbers custom logo.
 - 4. Ensure analog secondary clock is capable of receiving Sapling wireless signals every two (2) or four (4) hours for battery models and every minute for 24 V / 110V model.
 - 5. Materials:
 - a. Dial: Polystyrene
 - b. Case: Shallow profile, smooth surface ABS
 - c. Crystal: Shatter-proof, side-molded, polycarbonate.
 - 6. Hand tolerance:
 - a. Hour and minute hands: $\pm 1/4$ minute.
 - b. Second hand: $\pm 1/2$ minute.
 - 7. Power Requirements: Battery operated.
 - a. Batteries: 2 "D" cell batteries.
 - 1) Basis for design: Duracell Procell "D" Cell batteries.
 - 8. Basis of design: Sapling Inc., SAL-4 Series Wireless Round Clock.

2.14 SOURCE QUALITY CONTROL

- A. Ensure clock system components and accessories are supplied or approved in writing by single manufacturer.

2.15 EXECUTION

2.16 INSTALLERS

- A. Use only installers with 3 years verified minimum experience with work similar to work of this Section.
- B. Ensure all clock system components are installed by single communications and electronics subcontractor.

2.17 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for clock system installation in accordance with manufacturer's written recommendations.
 - 1. Visually inspect substrate in presence of Consultant.
 - 2. Ensure surfaces are free of snow, ice, frost, grease and other deleterious materials.
 - 3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.
- B. Start of clock system installation indicates installer's acceptance of substrate installation conditions.

2.18 INSTALLATION

- A. Install wireless clock system in accordance with manufacturer's written recommendations and in accordance with NFPA 70E.
- B. Integrate clock system with Owner's electrical and communications network.
- C. Install wiring in accordance with requirements of local Authority Having Jurisdiction and applicable specifications.
- D. Conceal wiring except in unfinished spaces and as approved in writing by Architect/Engineer.

- E. Install clocks only after painting and other finish work is completed in each room.
- F. Install clocks and other devices square and plumb.

2.19 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with Section 01 40 00 - Quality Control.

2.20 SYSTEM STARTUP

- A. At completion of installation and before final acceptance, turn on equipment and ensure equipment is operating properly, and clock system devices and components are functioning.
- B. Evaluate and test each device in clock system on room-by-room basis using factory-trained technicians.
 - 1. Fix or replace devices which fail test or are functioning incorrectly.
 - 2. Submit evaluation and report showing results of room-by-room tests and overall system compliance within 3 days of testing being carried out.

2.21 CLEANING

- A. Progress Cleaning: Perform cleanup as work progresses in accordance with Section 01 74 00 - Cleaning and Waste Management.
 - 1. Leave work area clean at end of each day.
- B. Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment in accordance with Section 01 74 00 - Cleaning and Waste Management.
- C. Waste Management:
 - 1. Co-ordinate recycling of waste materials with 01 74 19 - Construction Waste Management and Disposal.
 - 2. Collect recyclable waste and dispose of or recycle field generated construction waste created during construction or final cleaning related to work of this Section.
 - 3. Remove recycling containers and bins from site and dispose of materials at appropriate facility.

2.22 DEMONSTRATION AND TRAINING

- A. Arrange system demonstration and training session for Owner's operation and maintenance personnel.
 - 1. Allow Owner and Consultant 10 days minimum advance notice before training session.
- B. Break down system demonstration and training session into logical segments for Owner's operations and maintenance personnel.
- C. Train Owner's maintenance personnel in procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of clock system.

2.23 SYSTEM COMMISSIONING

- A. Do clock system commissioning in accordance with Manufacturer's instructions.

2.24 PROTECTION

- A. Protect installed products and accessories from damage during construction.
- B. Repair damage to adjacent materials caused by clock system installation.

END OF SECTION